

University News

MONDAY, DECEMBER 11, 1989

Rs. 2.50

8th. CONVOCATION (1989) SCHOOL OF PLANNING AND ARCHITECTURE



L to R : Prof. E.F.N. Ribeiro, Director, Shri L. P. Shahi, former Minister of State for Education, Prof. Yash Pal, Chairman, UGC, who delivered the Convocation Address, and Prof. M.R. Agnihotri, Dean of Studies.

PUNJAB AGRICULTURAL UNIVERSITY

ADMISSION NOTICE

Applications are invited for admission to Ph.D. programme in the following subjects for the academic session, 1989-90 commencing from February, 1990.

COLLEGE OF AGRICULTURE

Agronomy; Animal Science (Animal Breeding, Animal Nutrition, Animal Production Physiology, Livestock Production & Management); Extension Education; Entomology; Food Technology, Pomology; Vegetable Crops; Plant Breeding; Plant Pathology; Soil Sciences.

COLLEGE OF BASIC SCIENCES & HUMANITIES

Botany; Chemistry; Biochemistry; Economics; Genetics; Statistics; Microbiology; Zoology; Business Administration,

COLLEGE OF VETERINARY SCIENCE

Vety. Anatomy & Histology; Vety. Bacteriology and Virology; Vety. Obstetrics & Gynaecology; Vety. Surgery & Radiology; Vety. Medicine; Vety. Pharmacology; Vety. Parasitology; Vety. Pathology; Vety. Physiology.

COLLEGE OF AGRICULTURAL ENGINEERING

Farm Power & Machinery; Soil and Water Engineering; Processing & Agricultural Structures; Electrical Engineering.

SCHOOL OF ENERGY STUDIES IN AGRICULTURE

Energy Science & Technology (in the field of Engineering, Microbiology, Biochemistry and Agricultural Economics).

COLLEGE OF HOME SCIENCE

Foods & Nutrition.

MINIMUM QUALIFICATIONS AT A GLANCE

(i) For Inservice Candidates : A grade point average of 3.20 (4.00 basis) or 50% marks at Master's level in the respective field and a grade point average of 2.00 (4.00 basis) or 40% marks at graduation level.

Inservice candidate shall be an employee of PAU/Punjab Government/Union Territory of Chandigarh having atleast 5 years service with three years service after getting Master's degree on the last date of receipt of application

(ii) For other than Inservice Candidates : A grade point average of 3.40 (4.00 basis) or 60% marks at Master's level in the respective field and a grade point average of 2.00 (4.00 basis) or 50% marks at graduation level.

Note : (i) Please see Prospectus for the academic year 1989-90 for detailed qualifications, reservation and fellowships etc.

Fellowships : Fellowships are available under UNDP Project in the subject of Soils, Energy Science & Technology and Foods & Nutrition.

Prospectus and Application Forms : Available from the office of the Registrar, Punjab Agricultural University, Ludhiana on payment of Rs. 6/- per copy by cash at counter or by sending crossed Indian Postal Order(s) for Rs. 8/- payable to the Comptroller, Punjab Agricultural University at PAU Post Office, Ludhiana.

Last Date for Receipt of Applications : 31.12.1989.

Note : (ii) Only one application form will be entertained for Ph.D. programme on the basis of first preference of subject mentioned in the application form in order of interview fixed below. Incomplete applications without due testimonials are liable to be rejected.

Interviews : Interviews will be held on the following dates, time and place mentioned against the subject :

Subject	Date	Time	Place of Interview
Agronomy, Extension Education	15.1.90	9.00 AM	Pal Auditorium
Entomology, Plant Pathology,			Complex, PAU,
Food Technology			Ludhiana.
Plant Breeding, Pomology,	16.1.90	9.00 AM	-do-
Vegetable Crops, Animal			
Sciences, Soils			
Botany, Chemistry, Bio-	17.1.90	9.00 AM	-do-
Chemistry, Business Admn.			
Genetics, Zoology, Microbiology,	18.1.90	9.00 AM	-do-
Economics, Statistics			
College of Home Science	19.1.90	9.00 AM	-do-
College of Vety. Science	19.1.90	10.00 AM	-do-
College of Agril Engineering	19.1.90	11 00 AM	-do-
Energy Science & Technology			-do-

Note : (iii) : No separate interview letter will be issued. No T.A./D.A. is admissible.

S.S. Gill
REGISTRAR

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Editor :
SUTINDER SINGH

Accreditation and Assessment Council Concepts and Realities

Diwakar Shastri*

It is but natural that if a person, whose homeland presents a barren landscape, chances to visit a verdant region he is overpowered by a desire to take back some of the exotic plants in the hope that they will transform the scene back at home. This is happening too often with the educationists of India. Accreditation and Assessment System which has worked so well in the United States is being sought to be introduced in India, with great hope without paying the necessary heed to the characteristics which make our system so much different from the American.

The characteristics of Indian system which one can ignore in this connection only at one's own peril are the following :

1. In India no institution can award a degree unless :
 - (a) it is a university established by law (either central or state); or
 - (b) is an institution notified by the Government of India, on the advice of the University Grants Commission (under section 3 of the University Grants Commission Act) to be an Institution deemed to be University; or
 - (c) is an institution of National Importance, so declared by a resolution of the Parliament.
2. No college can prepare a student for sitting for an examination for award of a degree unless it is affiliated to a university.
3. Each university has a geographical area demarcated as its jurisdiction by an act of the Legislature and all colleges in that area must be affiliated to it and to it only.
4. There is a University Grants Commission as a funding agency of the state which grants financial assistance only after satisfying itself that the aided institution is maintaining satisfactory standards.
5. The University Grants Commission is not merely a funding agency but has regulating powers also in academic matters which it can enforce through control of purse strings.
6. There is an Association of Indian Universities which is already acting as Accreditation and Assessment agency in matter of external educational relations and which while granting membership to the university institutions can satisfy itself, initially and periodically about their standards.
7. There are number of agencies in special areas like Medicine, Agriculture, Law and Technology which are already performing the task of accreditation. These are Indian Medical Council, ICAR, Bar Council, AICTE, etc.
8. The Government of India and the Union Public Service Commission have granted equivalence to all the degrees granted by all the Universities established by law or by the institutions deemed to be university.

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According to the Concept Paper prepared by the UGC the main objective of the Accreditation and Assessment Council as envisaged by the New Education Policy (NEP) 1986 is "to assure the effectiveness of academic institutions while maximally supporting academic self regulation". It goes on to state that "the central motive to the accreditation system has come from the requirements of college autonomy." At the same time it hopes that it will ensure "the need for a systematic and regular means for assuring that colleges and universities are functioning effectively."

The first question that must be answered is how can, with the characteristic features of Indian educational system enumerated above, the envisaged agency can function at all.

Take the case of University X which has been established by an Act of State Legislature which gives it specific territorial jurisdiction and also ordains that all the colleges in its jurisdiction must necessarily be affiliated to it. If the Accreditation and Assessment Council, decides its non-accreditation and certain consequences to students follow from it (which, of course, have been spelled out in advance and publicised) what remedy the students have? What remedy responsible people of that area have? Can they establish another university or college, which will maintain the standards and get accreditation, for award of degree? Can a student afford to go to some other university or college in some other area which has got accreditation to ensure his career success?

Till such time there is a prescription that only universities established by law (or such similar institutions) can grant degrees and that all colleges within the territorial jurisdiction of a university must necessarily be affiliated to it. Accreditation and Assessment System is going to create more problems than solve.

There is already an Accreditation System working in the country. The State establishes and/or controls all the educational institutions, the university has the statutory power and duty to ensure academic standards in the colleges and there are watchdog bodies like the University Grants Commission, AICTE, IMC, Bar Council, etc. What is lacking is not a system but the will to work the system. Sometime back the Indian Medical Council derecognised some of the medical colleges in Bihar, but with what results? Sometime back in Rajasthan some Teachers

Training Colleges were being run on the basis of year to year affiliation and there were complaints of inadequate academic standards. A committee was appointed by the University to go into the matter. The Committee recommended non-grant of further affiliation and the colleges were asked to be closed. Within no time powers to be reckoned with got working and the colleges were again affiliated. What is happening to the capitation fee affair? Even some of the well established and highly reputed Technology institutions are not paying adequate emoluments to the faculty and the most of the teaching is being done by the Teaching Assistants. One can see the phenomenon of universities admitting 8,000, nay, 30,000 students to the B.Ed. Correspondence course. It surpasses one's imagination as to how practice teaching can be arranged for all of them. And, this is being done in the name of distance education, in the name of Open University System.

The malady is deeper and is exogeneous to the system. One may be tempted to say that it is only to fight the influences indicated above that an Accreditation and Assessment Council is needed. Let the buck not be passed. It would be naive to assume that the influences that work at the University or the State Government level do not work at the University Grants Commission or the Central Government level. There is also a real danger that in eagerness to promote autonomy we may resort to measures which may lead to over centralisation and negate the concept of autonomy altogether.

Glamour of all things Western, and in particular American, is great and institutions and ideas from there are being borrowed without giving adequate thought to their suitability or providing necessary safeguards. For example, we have introduced JRF, GATE, etc., on the lines of the GRE. But, while the GRE itself warns the user institutions that the scores should not be used in isolation for decision making as there is a significant margin of error. Here, in India the raw scores of various tests have become the final arbiter of the destiny of thousands. How dangerous it can be when we find that in Rajasthan many items of multiple choice questions in PMT, etc. are officially admitted, after the test, to have more than one or sometime non correct answer and hence to be wrong. In the United States GRE scores are being relied upon less and less by the universities. Similarly, research qualification for the teachers on which we are placing so great a faith here are being increasingly questioned as to their

(Continued on page 10)

Restructuring of Courses in the Autonomous Colleges of Andhra University

M. R. Rao*

Andhra Pradesh Universities' Act defined autonomous colleges but not autonomy. The UGC's Revised Guidelines on the scheme of Autonomous Colleges defined autonomy under the caption of objectives of autonomy. It defined that autonomous college will have the freedom to : determine its own courses of study and syllabi; prescribe rules of admission, subject of course to the reservation policy of the State Government; and evolve methods of evaluation and to conduct examinations. Autonomy is only a means to achieve specific objectives. It signifies that there is some terminal point towards which we are moving, working or travelling. According to the Revised Guidelines, "Autonomy shall rather be a means to achieve higher standards and greater creativity in the future". This means the autonomous colleges should produce higher quality students when compared to non-autonomous ones.

Another aspect of the autonomy is creativity. The autonomous college should be more innovative in nature so that creatively it meets the needs of region/community when compared to non-autonomous colleges. Stressing the need for autonomy the Revised Guidelines stressed that "the autonomous status for colleges aims at giving opportunity to the teachers and students to make innovation, utilise their creative talent, improve the standards of teaching, examination and research and quickly respond to social needs."

To achieve the above aims, an autonomous college will have freedom in determining its own courses of study and syllabi and evolving methods of evaluation and conducting examinations.

Structural Changes

Autonomous College may have its own Boards of Studies for different subjects, Academic Council and Board of Management. These three bodies are almost parallel to the University : Board of Studies, Academic Senate and Executive Council.

Board of Studies is the academic task determination body of a University. The Board determines the academic courses to be offered and their content, the methods of teaching and evaluation. The recommendations of the Board will go upwards to the Academic Council for approval and this process of task determination is described by Ashby as, "Inverted Hierarchy".

Composition of Board of Studies

The composition of Board of Studies in the autonomous college is more flexible when compared to the centralised Board of Studies at the University. According to Andhra University's existing statutes it generally consists of not more than fifteen members including the Chairman of the Corresponding Post-graduate Board and a student as ex-officio members. The term of the members shall be three years. Whereas the Board of Studies in the Autonomous Colleges as per the Revised Guidelines consists of the Head of the Department and all teachers having five years experience. There are three external experts out of which two will be nominated by its Academic Council and the other will be nominated by the University. The term of nominated members shall be two years. It is desirable to extend the term of nominated members to three years, so that the nominated members will have the opportunity of seeing the results of their Academic service. Another special feature in the Board of Studies in the autonomous college is flexibility.

The Chairman, Board of Studies with prior approval of the Principal who is the President of the Academic Council is authorised to co-opt experts from outside the college whenever special courses of studies are to be formulated and co-opt other members of staff of the senior faculty for the above. Thus autonomous colleges have freedom in drawing upon the expertise from outside the colleges whenever they need in designing of new/special courses of studies. This is a significant feature of autonomy.

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Functions of Board of Studies

According to the Andhra University statutes the functions of the Board of Studies are :

"It shall be the duty of each Board of Studies to consider and report on any matter referred to it by the Academic Senate, or the Executive Council or the Vice-Chancellor or the Faculty or President of the Faculty concerned with the respective branches of knowledge.

Each Board shall have power to make recommendations to the Academic Senate in regard to textbooks courses of study and examinations in the subject with which it deals.

Each Board shall have power to recommend to the Executive Council suitable persons for appointment as Examiners in the subject with which it deals".

The general apprehension is that the centralised Board of Studies is not providing adequate opportunity for the teachers of the affiliated colleges to take initiative for creative, imaginative and more fruitful action in the framing of syllabi and in bringing about the changes in the curriculum. Therefore the need to decentralize the academic authority from university to college was felt.

The functions of the Board of Studies of the autonomous college as suggested by the UGC are :

- (a) To prepare syllabi for various courses keeping in view the objectives of the college and the national requirement for consideration and approval of the Academic Council;
- (b) To suggest methodologies for innovative teaching and evaluation techniques;
- (c) To suggest a panel of names to the Academic Council for appointment of examiners; and
- (d) To coordinate research, teaching, extension and other academic activities in the Department/College.

These functions are similar to those of University Boards of Studies. The Board of Studies is solely responsible for formulation and modification of syllabi. The Academic Council of an autonomous college shall have the power to approve proposals

of the Boards of Studies with or without modifications. Of course it has also the right to return the proposals for reconsideration or to reject.

Structuring of Courses

All the universities in the State of Andhra Pradesh have agreed to implement the UGC guidelines on structuring of courses. Accordingly, the Andhra University adopted three components in the first degree course i.e. (a) foundation courses, (b) core courses, and (c) courses of applied nature.

Foundation Courses

The University Education Commission has pointed out that one of the major defects in the university system of education is the un-Indian character of education. The Commission said, "One of the serious complaints against the system of education which has prevailed in the country for over a century is that it neglected India's past, that it did not provide the Indian students with a knowledge of their own culture. It has produced in some cases the feeling that we are without roots; in others, what is worse, that our roots bind us to a world very different from that which surrounds us". The Education Commission 1964-66, popularly known as Kothari Commission, while narrating the responsibilities of universities, recommended that "they (universities) should ensure that every student who passes out of an Indian university takes with him some understanding of India's cultural heritage; its past achievements and triumphs in the field of art, philosophy, science and so on. He should, in other words, know what he is heir to. This could perhaps best be done at the first degree stage where such a study could form a part of programme of liberal education". The Programme of Action (POA) on New Education Policy (NEP) took up the task of implementing the above suggestions and stated, "A special emphasis should be laid on the study of India's composite culture so as to foster unity and integrity of the country among students. Women's studies will be one of the components of the foundation course".

The UGC has suggested twelve courses under the foundation courses. It is only an illustrative list of courses but not prescriptive in nature. One of the major foundation courses is languages. The objective of the course is to develop communication skill among the students rather than literacy skills and criticism, etc. Accordingly the Andhra University

made it compulsory to study languages in the first and second years of three year study for the Degree. The autonomous colleges have followed the same. Of course, in the beginning an autonomous college made an attempt to remove the regional language Telugu in the second year B.Sc. in order to accommodate more number of hours for the Science subjects. But it was opposed in the Academic Council and finally dropped.

In addition to the languages, the UGC has suggested a list of subjects relevant to the social, cultural and natural environment of our country. The University has introduced "Indian Heritage & Culture" and "Science & Civilisation" in all the degree courses in the first and second years and the examination is conducted at the end of second year. The UGC has suggested that option should be given to students to choose courses out of the stipulated number of courses. It suggested that the alternative should be so provided that there is some degree of equivalence as well as flexibility and the colleges are enabled to select relevant courses depending on the teaching resources available with them. The autonomous colleges have freedom to select and offer courses out of the stipulated number of courses. The same privilege is not available to non-autonomous colleges since the University conducts uniform examination for all its affiliated colleges.

St. Joseph's Autonomous College for Women, Visakhapatnam which is one of the seven autonomous colleges of Andhra University is offering the following foundation courses in the first and second years besides languages :

- (i) Women's Studies (I Semester)
- (ii) Science & Society (II Semester)
- (iii) Indian Culture & Heritage with special reference to Telugu speaking people (III Semester)
- (iv) Computer Science (IV Semester)

It has designed these courses with the help of expertise in a commendable manner based on the principles of equality, excellence and relevance. The other autonomous colleges have followed the University prescribed subject as mentioned above.

Core Courses

Generally in B.A. and B.Sc. a student has to study two or three subjects of different disciplines under

one combination whereas in the B.Sc. (Home Science) and B.Com. the student studies various subjects of one discipline. The controversy is whether the student has to study all the three subjects of equal depth or to study one subject in a much greater depth than the other two. The Education Commission defined "General" and "Special" courses of study. "We define a general course as one in which the student takes three subjects at about the same depth. The "Special" course would be different in kind and provide for the teaching of three subjects of which one would be taken at a much greater depth than the other two". The UGC guidelines on the structuring of courses has advocated that the University may consider prescribing that one of the subjects under core courses may be taken as a major subject in which student may, if he so wishes, pursue postgraduate studies whereas the other subject or subjects may be of subsidiary nature.

The Andhra University had this pattern before the introduction of common core scheme from the year 1987-88. It experimented one main and two ancillary subjects for the B.A. and B.Sc. students, but the student has no choice of selecting different postgraduate (P.G.) courses except in one P.G. Course where he has taken it as main in the B.Sc./B.A. The ancillary subjects were not taken into consideration for admission into P.G. Courses.

The report on Standards of Education has suggested two streams for the graduate courses : One is Pass course and the other is Honours course. The objective of pass course is to provide general education for preparing students for employment in the administrative services, business organisations and other sectors, where specialisation and professional training are not called for. On the other hand the Honours Course should aim at greater specialisation on the basis of which the student could proceed to postgraduate studies. The Andhra University opted the first stream, i.e., general with three equal optional subjects without much specialisation at the graduate level from the year 1987-88. A student who wants to specialise any particular optional subject out of three can do so at the postgraduate level. The traditional method of combining subjects is still predominant in all the autonomous colleges of Andhra University such as Mathematics, Physics and Chemistry; Chemistry, Botany and Zoology in the B.Sc. and History, Economics and Politics in the B.A. All the three subjects are core subjects in the traditional combinations.

The UGC has suggested various new combinations by introducing one course of applied nature along with related basic subjects. The Andhra University has approved all the combinations under restructured courses as suggested by the UGC. In addition to the UGC suggested combinations, the University has also designed new combinations such as, Mathematics, Economics and Computer Applications; Economics, Commerce and Rural Development; English Literature, Psychology and Office Management.

According to the UGC guidelines on the structuring of courses it seems there are divergent objectives in offering the courses of applied nature. (1) "The components of academic subjects have essentially to be the same so that students pursuing these courses are able to go in for postgraduate studies, but their orientation may be different in regard to application of knowledge of the concerned discipline to relevant situations." (2) "The course should not be introduced with the intention of enabling the students to take up postgraduate studies in such subjects."

All autonomous colleges in the Andhra University area have introduced courses of applied nature as a third component along with the two core courses and foundation courses. The following combinations of subjects are offered :

(i) Mathematics, Physics & Instrumentation; (ii) Mathematics, Physics & Electronics; (iii) Mathematics, Physics & Computer Science; (iv) Mathematics, Physics & Applied Chemistry; (v) Geology, Chemistry & Mineral Beneficiation; (vi) Geology, Material Handling & Mineral Beneficiation; (vii) Botany, Chemistry & Horticulture; (viii) Botany, Chemistry & Agriculture; (ix) Zoology, Chemistry & Fisheries; (x) Zoology, Chemistry & Nutrition; (xi) History, Economics & Industrial Relations; (xii) Economics, Commerce & Farm Management; (xiii) Commerce, Economics & Industrial Relations; (xiv) Commerce, Economics & Management Studies; (xv) English, Politics & Pre-School Education, and (xvi) English Literature, Psychology and Office Management.

All the autonomous colleges, with the exception of two have selected the above combinations as suggested by the UGC. The other two colleges

have designed new combinations different from the UGC suggested combinations but framed within the framework of revised guidelines on the structuring of courses. The curriculum of the courses of Material Handling and Mineral Beneficiation offered by S.D.S. College of Arts and Applied Sciences at Shreeramnagar are well-designed with the help of expertise from the University Engineering Faculty, concerned national institutions and industrial undertakings. The other college, St. Joseph's College for Women, Visakhapatnam, has introduced Office Management along with English Literature and Psychology. It is specially designed to equip women for employment.

Problems and Prospects of Applied Courses

The UGC has suggested two sets of combinations : one is for the Sciences and the other for Arts, separately. The Committee on Standards of Education (1964) states, "We are thinking of a broader spectrum of subjects and combination of subjects to provide scope for the expression of the latent talent of students. Universities have been following the traditional method of combining the subjects and very little thought seems to have been devoted to the introduction of new subjects and their alignment". The Kothari Commission has recommended that the combination of subjects permissible for the first degree should also be more elastic than at present in the arts and in the sciences. Hitherto we have traditional type of combinations such as Mathematics, Physics & Chemistry; Chemistry, Botany & Zoology in the Sciences, History, Economics & Politics in Arts. The combination of subjects should not be water-tight compartments and a new alignment of subjects should take place as per the needs of the region/nation in the autonomous colleges. The P.S.G. College of Science & Technology, Coimbatore is offering B.Sc. (Applied Sciences) with a judicious combination of pure Sciences, Engineering skills, management techniques and an awareness of socio-economic problems of the country. Similarly autonomous colleges should reframe their combinations and offer courses including professional courses with Sciences and Arts. Unless there is flexibility in the combination, it may not be possible for the autonomous colleges to offer 'relevant' courses. The National Service Scheme (NSS), Mass Programme for Functional Illiteracy (MPFL) and other extension programmes will be more effective only when autonomous colleges offer agricultural sciences such as soil sciences, farm management, horticulture, dairy sciences, etc., and technical courses such as

instrumentation, electronics, computers, farm equipment, rural technology, etc.

The Revised Guidelines on the Structuring of courses sounded a note of caution with regard to applied courses. "The courses offered as part of application oriented subjects may not necessarily be the same as in agricultural and technological universities and may be introduced with a view to familiarising the students with that subject and equipping him with the skills and techniques which may help him in finding an employment with the local industries or start his own venture/self-employment after graduation". The courses should not be introduced with the intention of enabling the students to take up postgraduate studies in such subjects. It means the courses of applied nature should be terminal courses. The same guidelines stated under the caption of objectives of structured courses, the students pursuing the courses of applied nature be able to go in for postgraduate studies.

The Central Advisory Board for Education (CABE) at its meeting held on 11-12 March, 1988 observed that "in order to promote the efforts for redesigning of courses at the first degree level, it is necessary that the course contents and pre-requisites for admission to the Master's Degree are reviewed. Unless this is done, introduction of flexibility in the

combination of courses at the first degree level will be difficult to achieve". The Andhra University has already started taking steps in reforming the existing postgraduate courses or starting of new postgraduate courses for the students who have opted for the application orientation courses/new combination of subjects. Admission criteria for the postgraduate courses should be altered in order to provide opportunities for those who opted for the restructured courses. If the University is not able to open new postgraduate courses, the autonomous colleges should be allowed to offer postgraduate diploma courses in the applied courses. This is the reason why the UGC has asked "the Universities may consider introducing post B.A./B.Sc./B.Com., diploma courses of one year duration in such subjects which may increase the area of employability of graduates". When students of applied courses are not employable with the graduate degree, it is desirable to offer one-year postgraduate diploma course in the applied courses. The UGC has to motivate the universities/colleges to offer such diplomas in the applied courses and the State Government should give necessary concurrence for such courses. □

[The views expressed in the article are those of the author and not the Andhra University].

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GUIDANCE SERVICES IN COLLEGES

Udaya Mahadevan*

In almost every college, there are many students who are emotionally disturbed and who have personal and family difficulties that call for immediate attention. Most of the problems manifested by students like poor scholastic performance, aggressive behaviour, withdrawal tendencies, nervousness, lack of achievement, a feeling of apathy and lack of interest, chronic absenteeism and associated tendencies, are all clear indicators of a deeper personal and family psychopathology. Problems like drug abuse and compulsive smoking and drinking, are on the increase among college students. Those students who are personally and socially maladjusted, fall an easy prey to such dangerous habits.

Meaning and Implications

Guidance services involve a process of dynamic interpersonal relationship designed to influence the attitudes and subsequent behaviour of a student. Through appropriate guidance services, the student is helped to develop desirable attitudes and behaviour patterns. The programmes are so designed that, besides helping the student to effectively handle his problem, they also enable the student to make more effective use of the various training programmes in the college. In colleges where counsellors are appointed, they take care of a variety of programmes and services that would benefit the student community. The counsellor not only works with a maladjusted student but also plans out effective programmes that enable the normal, adjusted student, to function better and to develop a more stable and strong personality. Group dynamics sessions, programmes for developing effective communication skills, individual and group exercises for handling crises situations and vocational guidance services, are some of the programmes organized by a counsellor, for developing a student's personal and social skills.

Vocational Guidance

In any college or University Department, vocational guidance services are to be considered as a very basic and essential service to the student community. Vocational guidance services should be

made available in every educational institution so that the student is assisted to choose an occupation, prepare for it, enter upon and progress in it. It is concerned primarily with helping students make decisions and choices involved in planning a future and building a career. In colleges where vocational guidance counsellors are appointed, they render the following concrete services and programmes :

1. To assist the student to acquire such knowledge with regard to the various training programmes and educational and research courses that are offered at the local, regional, national and international levels so that the students who wish to pursue these programmes can apply for the same.
2. Conducting various aptitude tests to assess the skills and aptitude of students with regard to specific training programmes or jobs.
3. Offering guidance with regard to various national and international scholarships that are available to students for various courses and categories of students, at national and international universities.
4. Helping the students to compete for (a) various competitive examinations at the state and national levels, and (b) entrance examinations for national and international courses. Adequate guidance is given with regard to the various training facilities available, preparing students to face interviews, group discussion sessions and similar programmes, so that these would strengthen their skills and build-up their confidence.
5. Organizing campus interviews so that the final year students of the undergraduate and postgraduate courses are selected for suitable jobs.

Personal Guidance

Personal guidance services involve professional assistance offered to the student to solve his emotional, family, health and other social problems. Students in a college or in an University are generally young adults and therefore go through several emotional and personal maladjustments that warrant

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professional intervention and help from a trained counsellor. The question of marriage and problems associated with sex may occupy their minds and they therefore need personal guidance in these matters. There are students who may be facing serious emotional problems involving their close family members. There are students who come from disorganised families, broken families, and from families with severe psychopathologies and who require professional help and guidance. In such cases the counsellor may even make a home visit and resort to family therapy measures so that a more conducive atmosphere is built up at home for the personal and social development of the student.

Who Renders Guidance ?

Guidance services require personnel who are specially trained to deal with a student's deeper tensions and emotional conflicts. Guidance services are best rendered either by a trained counsellor, a professionally trained social worker or a clinical psychologist.

Case Studies

The following case studies discussed below explain how effectively students can be helped through guidance services. Both the cases discussed here are based on the author's own experiences as a professionally trained social worker. For obvious reasons, the real names of the cases, have been withheld.

Case Study I

Vivek, a boy of 18 years, studying in the B.A. course in a college in the city, was referred to the counsellor, by one of his professors, for, "poor attitude towards work, restlessness, withdrawal tendencies and stealing." An in-depth interview with Vivek enabled him to reveal the following details :

Vivek was the only child to his parents, who were employed abroad as doctors. It was more than a year since they had left India. Vivek was made to live with his uncle, a businessman, who was most of the time away from the house. Vivek's aunt, a very reserved person, had just returned to her husband's place after her first delivery and was, for most of the time, busy with her new born infant. Vivek, who felt lonely and even depressed at times, wrote to his

parents stating that he missed them very much. Vivek got a reply from his parents stating that they were making a lot of money and that it would be foolish for them to come away at this time and that Vivek should learn to adjust for another two years without them. As a growing young man, he had several personal and social pressures to cope with, but he had no one close to him in his own family circle who could understand him. Loneliness and depression, coupled with feelings of insecurity, made him seek the company of certain undesirable friends in the locality. He spent the entire evening hours with these friends. Gradually, the peer group influence induced him to resort to drugs, and in course of time he started stealing money and articles from all possible sources, in order to purchase drugs.

As soon as the problem was identified, the counsellor explained the situation to Vivek's uncle and with the help of the counsellor Vivek was placed under the care of a psychiatrist. His parents were asked to come immediately. The counsellor explained to them the emotional needs of their son and factors responsible for the present condition. Vivek's mother realised the need to stay back with her son. After his discharge from the hospital, she took up a house in another locality and settled down with her son. Vivek joined a local sports club and spent his evening hours playing tennis or learning swimming. He enjoyed the company of his new friends. The presence of his mother gave him a feeling of security. Vivek was able to establish a strong rapport with the counsellor who helped him to cope with his personal and social problems. All these support networks contributed to his progress. Vivek was able to show considerable improvement in his studies and there were positive changes in his behaviour.

Case Study II

Palani, a student of 19 years, studying in the I year B.A. Course in a city college was referred to the counsellor by one of his professors for (a) Lack of attention in class, (b) sleeping soundly while the lectures are going on, (c) not submitting the assignment and other internal assessments, and (d) frequently absenting himself from class tests.

An in-depth interview with Palani revealed the following facts :

Palani belonged to a very poor backward class family and was residing along with his mother in one

of the slum tenements. His father had deserted the family when Palani was a boy of 10 years and nobody knew where his father was. His mother worked as a helper in a private nursing home for a salary of Rs. 150/- per month, which was barely sufficient to support herself and Palani. Palani had finished his plus two examination from the local government school and had scored very high marks. This gave him the confidence and encouragement to go for higher studies. He however felt that he should no longer be a burden to his mother and that he should take up some part-time job in order to meet his college fees. In the morning hours, he worked for a newspaper agent and went from house to house delivering newspapers. In the evenings he worked in a Readymade Garments show room. These part-time jobs fetched him a monthly income of Rs. 350/-. Palani usually left the house at 5 A.M. and returned only around 10.30 P.M. after a hard day's work. Very often he was forced to skip his breakfast due to the pressure of work during the morning hours. All these factors were responsible for his lack of attention and a tendency to dose off while the lectures were being delivered. Palani told the counsellor that he was not able to fulfil the requirements of the assignments, tests and other internal assessments because he did not have the time to prepare for any of these. As he did not have the time to prepare for the tests, he also lacked the confidence to attempt the tests.

An objective assessment of the situation enabled

the counsellor to realize that the student was intelligent, hard working and genuinely interested in his studies but due to his family circumstances he was forced to neglect his studies. The counsellor immediately contacted the social workers in a voluntary agency that sponsors the education of economically backward and genuine students, and explained the details of the case. The social workers readily agreed to sponsor the studies of Palani so that he could spend his leisure hours usefully, preparing for his internal assessments and examinations.

Such an arrangement helped in bringing about a very positive change in Palani. The effects of such an arrangement were seen in Palani's performance in his internal assessments. There was a remarkable improvement. Both Palani and his professors were happy that he was able to pay proper attention in class as he was no longer hungry, tired or exhausted.

Conclusion

These are just a few of a number of typical cases that are found in possibly every college in the country. A college or a university department with a guidance centre can contribute to a richer, fuller, and more satisfying life for the students, teachers, the administrators and the parents. Therefore, such a professional service should be an integral part of the college community, all over the country. ☐

Accreditation and Assessment Council

(Continued from page 2)

relevance in the United States.

All this indicates that in the matter of accreditation also caution should be our watchword. Without any new agency we can achieve our objectives to large extent only if we can :

- (a) make efforts to protect (one can not hope to insulate) the university system from political interference;
- (b) ensure financial self sufficiency, (with accountability, of course) so that they can preserve their autonomy;
- (c) ask University Grants Commission to discharge its academic functions effectively (without bureaucratic influence which is so

regrettably overtaking it); and

- (d) delink the degrees from jobs.

We are good at creating more and more mechanisms and more and more agencies rather than looking at the root causes of the rot in the system. Unless we address ourselves to this task cosmetic efforts like creation of an Accreditation and Assessment Council will be putting one more wheel to a vehicle which is not moving due to engine failure.

Ill fares the system, to hastening ills a prey,
Where agencies proliferate and institutions decay*

*With apologies to Oliver Goldsmith (1728-1774)
"Ill fares the land, to hastening ills a prey
Where wealth accumulates, and men decay" ☐

ZERO-SUM GAME

"We somehow find ourselves engaged in zero-sum game at various hierarchical levels of operation viz., local, city level, country level, the world level. You do build beautiful organisations, places, nice buildings, tall skyscrapers, lovely interiors. But it necessarily brings about a slum next door. So the total amount of entropy does not change though some order is brought about. The disorder is thrown outside, but the change is very little", said Prof. Yashpal, Chairman, UGC while delivering the Convocation Address at the Eighth Convocation of the School of Planning and Architecture, New Delhi. "I think the architects must necessarily be social activists, social scientists. You must acquire that particular element, if you have to move away from this zero-sum game" he added. Excerpts

Wherever I look in this world, in this universe, of course, being a physical scientist, one of the greatest joys and pleasures I have had in my life and continue to have, is to see the beauty of architecture of this universe, the fantastic beauty of its architecture; where in fact in your language, the styles are modules, while the basic units actually are not that many. You all know that the number of elements is only 92. All this richness which we see

myself and you? All these emerge out of this beautiful design which was planned, with these special properties. This design gives an enormous set of phrases, larger alphabet, which has evolved in this planet through millions of years, and these are the phrases in which the language of life is written, through which the tremendous richness of life is encountered, whether it is the butterfly, the elephant or the panther, the plants or mighty trees, fish or

Convocation

around us, all the beauty of the stars and heavens and so on, is essentially made of permutations and combinations of these 92 bricks. These bricks acquire different properties, depending on what conditions they are in. These different properties of the modules which lead in a sense to decentralise systems to flower in many different ways, with different flowers, with people and fish, stars, buildings and microphones, our Chairman,

whale. But there is just one set of alphabet and one type of language in which all the information for this is written, and it manifests itself in such profusion, in such beauty, in such wondrous interdependent ways. What kind of genius of architecture is this? And there is no centralised collection of planets sitting there saying "this shall be so". This is the great beauty, the great joy, of being alive and being given an opportunity of understanding,

and much more than that, enjoying this wondrous thing, which we happen to be part of, for a few years, 50 or 70 years.

Is there any lesson to be learnt from this, in regard to the work you do, in regard to our profession, in regard to the work I do? I think, in a generalised way, yes.

You will agree with me that, in spite of all the expertise which we are developing in terms of planning and design, (I happen to be connected also with another design institute, the National Institute of Design) we somehow find ourselves engaged in zero sum game at various hierarchical levels of operation viz., local, city level, country level, the world level. You do build beautiful organisations, places, nice buildings, tall skyscrapers, lovely interiors. But it necessarily brings about a slum next door. So the total amount of entropy does not change though some order is brought about. The disorder is thrown outside, but the change is very little. You develop metropolises like Delhi and Bombay; you develop big towns with roads for cars and good buildings to live in for some people. But there is nothing as horrible in our country, nothing as dampening as the environment just on the fringe of these large cities, as if all the niceties which we put in larger buildings, in beautiful homes, in nicer places, must be cancelled out by the surrounding unpleasantness.

The same is happening at the international level. The industrialised world, the developed world, goes on developing, which means it goes on consuming more and more resources from this planet. You are all dazzled by the brilliant artifacts of that civilisation which you see. We all

think that we can all be like that. You all worry about the questions of balance of trade, terms of trade and so on, and, quite rightly too because your labour, when you work in India, the same work which you do here is measured to be a tenth of what it would be measured if you worked outside. So, there is a horrible amount of cheating going on with the exploitation of the resources which occur in poor countries. So, while there may not be any political domination or overt exploitation, the economic system, the world system has come to such that while one side goes on consuming all the resources, and develops further, the other part, 7/10 of the world in comparison, goes down, further and further down.

In planning and architecture and design, is it possible that in some way the disorder is thrown out? You know the second law of thermodynamics. I have been talking of entropy. This entropy is the amount of disorder. If you do not do something, the amount of disorder will go on increasing. The work of an intellectual, the great work of an architect, the work of a person who builds is to decrease the entropy, which means to increase order. But, if in the process of increasing order, you throw some entropy out, you will increase disorder outside. Is this necessary? Is it an absolute law of nature that it must be so? I refuse to accept that it is the law of nature.

Let me give you an example on a global scale. You must have heard that these days there is a lot of concern about the global environment, about possible climatic changes which might take place. It is not established that this will happen, but the trends

are very frightening. One of the causes of this is the amount of carbon, methane, and carbon dioxide which we throw in the air by burning fossils and fuel.

There was a discussion in Vienna, at the International Institute of Applied Systems Analysis. They have thrown up some figures, measured in some units, which indicate the per capita diffusion of carbon in the atmosphere, which is the cause of change of climate. The per capita diffusion in some units, is 5 for United States, 3 for Europe, 0.3 for China and 0.15 for India, the world average being 1. The world average of 1 is already causing tremendous amount of concern, because with the increasing accumulation of carbon dioxide, the atmosphere will get warmer, the climate will change, the Antarctica ice may melt, the islands may go in the sea, 40 per cent of Bangladesh may disappear and a whole lot of other things may happen in about 50 to 100 years. Our monsoon may become much more violent leading to many more floods. North America and other places may dry up and change into desert.

Everybody knows that we are playing with the planet, which is a living organism. We have become profligate in the use of our resources, in the kind of activity you will be engaged in, i.e. building architecture, and all kinds of things, in addition to the industrial activity. Note that the figure of the diffusion of carbon for India is 0.15, while for United States it is 5, and the world average is 1 which is too high. So, the world average has to be reduced. What does it mean? Does it mean that India should not proceed further with its industrialisation that it should set this figure

at 0.1, besides limiting its population, or does it imply that there has to be a major change in our concept of what is a good way of living, a way that this planet can sustain? Is it not necessary that those who are throwing 5 units into the atmosphere, may have necessarily to change their way of life and come down to at least 1?

These are explosive issues which must be seriously considered. It is generally assumed that for all times to come, countries which have already developed shall remain so and others shall stay behind. I refuse to accept this. It is a bad equation.

I also refuse to accept that you will have beautiful buildings, beautiful cities, nice architecture and lovely gardens in the cities and that at the periphery of the city, you start with the most horrible living conditions. I have just been to Ludhiana and I have seen the conditions of the outside part of the industrial city, a very well-to-do city, as you pass through it. It is true of most of our cities.

You may say: what have I got to do with this; I have been asked by the government to plan and so on. So, I want to put a question to you, to myself, to all of us. While we work, should we not look into the impact of what we do? If you design a building or some road, you should not think only in terms of the materials and equipment required for that purpose. You should also think in terms of how to build it. You should also think in terms of, if labour comes, where will it stay, what will happen to them afterwards, where will they go. That seems to be something which we do not worry about. Whether it is in Punjab or big cities, we get

labour for immediate use and throw them out. That is where you throw out your disorder in society. If this goes on, anything nice we do will be cancelled out in totality. I am not talking of only physical environment; I am talking of the social environment, people's environment which has changed because of our activities. I think it is time we begin to look into these aspects. Only then will the good and beautiful we create be unalloyed, and there will be positive movement towards order, and not just a zero-sum game.

A couple of other things I want to share with you. You are experts; you will do what you are asked to do; you will plan what you want to look at for planning purposes. But the question why over the years, a city like Delhi, which used to have very good bicycle paths, should have no bicycle paths any more? You have heard the saying, "I have found that, no matter what transport you use in a city, there is a natural law that the maximum speed at which you can cross any metropolis is 7 miles an hour". If you go by car, you go a little faster but the number of cars will increase to such a level that you cannot go more than 7 miles an hour. If there are no cars, bicycles easily take you faster than 7 miles an hour, it is all right; if you have to walk, you do not go 7 miles. Well, we keep on making it so hazardous for people to bicycle in this town and even to walk in this town. It is a shame that of all the big metropolis in the world, the city of Delhi does not have walking roads. In all the major cities you have very special bicycling pathways, and you have demolished them. Every time we need, we cut out the pavement a little more and widen the road. What

kind of planning is this? Whom are we doing it for? What is the city for? Only for a few people who ride in cars? What is happening to the quality of life?

I live hardly a km away, less than one km away from my office of the UGC. It is lovely to walk except for the hazard of crossing the road and being run over. In the process I would like to bicycle to office, but it is so dangerous at my age. It is horrible to take a car from my home to the office. But that is the fashion. You make big roads. You have a driver; he drives you. You are closed, you are isolated from the rest.

I do not consider this particular design of metropolises and cities, which we are encouraging, to be suited to our land. Most people walk; a large number of people can bicycle. But we eliminate bicycle paths, we eliminate walking places and we make these beautiful highways, fly-ways and so on and so forth. We think we are developing marvellous places. It may be marvellous in abstraction, in comparison to some other places. But it is not so for the

people of this land.

I think the architects must necessarily be social activists, social scientists. You must acquire that particular element, if you have to move away from this zero-sum game.

So, I would like to give you this exhortation. You are happy, be happy; enjoy yourself. I think there is a great deal you can do for bringing about this change in thinking, because what you are involved in is not just building an architecture, but a whole way of thinking about things. That is what planning and architecture is about. The number of dimensions you can bring in your thinking is large. Very few experts do that. And the more the number of dimensions you bring in, the greater depth you look at, the greater empathy you bring to your work, may be greater the fulfilment, the greater the joy. But what you have is not complete learning; you will go on learning, you will go on developing. And that way I think I can wish you tremendous fulfilment, great opportunities to contribute.

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JUNIOR RESEARCH FELLOWSHIP

**AT INTER UNIVERSITY CONSORTIUM FOR
DEPARTMENT OF ATOMIC ENERGY FACILITIES**

DEVI AHILYA VISHWAVIDYALAYA

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Inter University Consortium invites applications from qualified candidates for Junior Research Fellowship to work in various programmes of the Consortium involving Design, Fabrication, Research and Development. Selection for this year will be made on the basis of a test/interview to be held in Indore during the third week of January, 1990. The programme will commence soon afterwards.

Inter University Consortium has been set up recently by the University Grants Commission for the utilization, by research workers from various universities and institutions of higher learning in the country, of the major front line research facilities such as Dhruva Reactor (Bombay), Variable Energy Cyclotron (Calcutta), etc. that have already been set up and Synchrotron Radiation Source that is being set up by the Department of Atomic Energy at Indore for research and development in various branches of science and technology and applications in Electronics, Medicine and Surgery, etc. The Consortium will undertake Design, Fabrication and Commissioning of two beam lines for the Synchrotron Radiation Source, Detectors, Targets, etc. The Consortium will provide stimulating atmosphere for research and study. It will provide ample opportunities for interaction with a large number of visitors and with senior scientists from BARC, CAT and VECC. Researchers working in or through the Consortium will also have access to the library, workshop and other infrastructural facilities of the Department of Atomic Energy Centres.

QUALIFICATIONS

Applicants should be M.Sc. or with equivalent degree in Physics/Electronics/Computers or Masters degree in Engineering in Electronics/Computers/Control Systems with adequate background of Physics and Mathematics.

Applications typed on plain paper giving name, address, date of birth, marital status, academic record with institutions attended, research experience, field of interest and accompanied with photocopies of mark-sheets and other relevant documents reach the undersigned before 31.12.1989.

**(PROFESSOR SIDDHESHWAR LAL)
CHIEF EXECUTIVE,
I.U.C.-D.A.E.F.**

WORLD LITERACY DAY

The Avinashilingam Institute for Home Science and Higher Education for Women (Deemed University) celebrated the International Literacy Day on 8th September, 1989. As part of the programme, the university organised competitions, cultural programmes and participation in the Literacy rally.

Inaugurating the activities for the International Literacy Year, the Honourable Minister for Education Perasiriar Thiru K. Anbazhagan, said that the Tamil Nadu Government expected to achieve cent percent literacy in the state in the next five or six years and with this in view the Government was implementing intensively an Adult Education Programme with central support. He urged the students and teachers of the university and service organisations to work for quicker achievements of the project. The Education Minister lauded the role played by the Avinashilingam Institute in promoting literacy in rural areas in Coimbatore District.

Dr. (Tmt) Rajammal P. Devadas, Vice-Chancellor, said that social welfare programmes have been incorporated into the curriculum both at undergraduate and postgraduate levels in the Institute with a view to create social awareness amongst students, parents and the public. She pointed out that the adult education programme had been taken up in a big way by the postgraduate students and NSS volunteers. She indicated the different approaches which will be adopted, the centre and individual coaching approaches, depending on the situational details of the illiterates. With the UGC's assistance, 100 Adult Education Centres

were planned to be set up in 10 corporation areas spread in four divisions. The postgraduate students numbering 264 would be in-charge of these centres. The Vice-Chancellor added that Literacy Jathas would also be launched in different points of time to focus on the importance of education among adults and to motivate the illiterates to become literates, under an effective programme.

Mr. M. Raman, IAS, District Collector of Coimbatore, and Mr. V. Ramamoorthy, IAS, Special Commissioner for Land Reforms and Administration, Government of Tamil Nadu, were the Chief Guests at the function. Mr. Raman said that Coimbatore was selected under the National Literacy Mission as Technology Demonstration District (TDD) to achieve cent percent literacy among the age group 15-35 years by the end of 1990. He was sure that this target could be realised with the help of service minded staff and students of institutions like the Avinashilingam Institute for Home Science and Higher Education for Women. Mr. Ramamurthy favoured a time-bound programme for the spread of literacy.

Dr. (Tmt.) Janabai J. Giri, Dean, Faculty of Science and Co-ordinator of the programme presented the report on the efforts made by the university and the future plans for the eradication of illiteracy in Coimbatore District. She also felicitated the Vice-Chancellor who has been selected for the Tagore Literacy Award by the Indian Adult Education Association.

PG Diploma in English

The Manipal Institute of Languages (MIL) attached to the

Dr. T.M.A. Pai College of Education, Udipi, recently started a new postgraduation diploma in English. Inaugurating the new course Prof. C.N. Ramachandran, Head of the Department of English at the Mangalore University, praised the MIL for its dynamic language courses especially those which trained foreign students in English. He termed the new English Diploma as an 'innovative cause' and hoped that the MIL would one day become an institution for the study of advanced courses in language.

Earlier, Dr. Sukumar Gowda, Director of the MIL, welcomed and thanked Prof. Ramachandran for being actively involved in starting the new diploma.

National Seminar on Construction Management

The Civil Engineering Department, Thapar Institute of Engineering & Technology (TIET), Patiala recently organised a National Seminar on 'Construction Management'. Prof. T.R. Anantharaman, Director, TIET inaugurated the seminar. Presiding over the inaugural function Shri Rajan Kashyap, Secretary, Technical Education & Industrial Training, Punjab State, laid stress on the importance and relevance of Engineering Education and referred to some special features in the development of Technical Education in Punjab State in the recent past.

Dr. N.S. Sodhi, Advisor to the Punjab State Council for Science & Technology, in his Keynote Address highlighted the fact that Construction Management is the second largest economic activity and generates employment on a vast scale. He felt the need for domestic Construction Management and suggested the use of new

materials and technologies for cost control and quality construction.

Dr. C.B. Kukreja, Professor & Head, Civil Engineering Department, and Co-ordinator of the Seminar, elaborated on the importance of Construction in the National Development. He said Construction was a multidisciplinary activity and needed Quality Control from the first stage to the final stage.

About seventy delegates from different parts of the country representing various Engineering Departments and Educational Institutions participated in the deliberations of the Seminar, spread over four technical sessions. Over 30 papers covering all aspects of Construction Management including Material & Techniques, Optimization and Use of Computers in Construction Management were presented.

Research Methodology in Area Planning

The Department of Earth Sciences, Manipur University, Imphal will organise an ICSSR sponsored Training Course in Research Methodology in Area Planning from February 1 to March 2, 1990. The participants to the course will be exposed to the basic principles of Area Planning, their application in India and research methodology and quantitative and cartographic tools used in such research. They will be induced to draw up research proposals under the guidance of the course faculty, which will consist of the academic staff of Manipur University and experts available in the Universities and research institutes elsewhere in the country.

The participants will be drawn from among the research scholars,

teachers in Universities and colleges and field officers of the Departments of Planning, Rural and Tribal Development of the states of North-East India. Preference will be given to those who are engaged in or intend to take up research in Area Planning and Regional Development. The total intake will be 30.

Intending participants may send their nominations through their research supervisors/heads of departments/institutions latest by 10th January, 1990 to Dr. R.P. Singh, Course Director, Department of Earth Sciences, Manipur University, Imphal-795003.

Winter School on Futurology in Energy

The University School of Education of the Devi Ahilya Vishwavidyalaya, Indore proposes to organise a Winter School on Futurology in Energy and Methods of Futures Studies from 16-22, December, 1989. The objectives of the Course are (i) to develop awareness among academicians, and policy makers about the futures studies, forecasting, technology assessment, perspective planning and management; (ii) to familiarise the participants with various methods and approaches of futures studies; to enable them using different methods appropriate for building alternative models/scenarios of energy futures; and to enable the participants to plan the activities of energy management at different levels.

The course contents include (i) Relevance of Futures Studies, Technology Assessment and Technology Forecasting with special reference to energy; (ii) Systems Approach in Futures Studies; (iii) Technology watching, Forecasting and Assessment; (iv) Extrapolation

Methods; (v) Modelling and Simulation; (vi) Delphi Method and Case Studies; (vii) Scenario Building; (viii) Long Range Perspective Planning; (ix) Energy Scenarios in 2000 AD : Renewable, Traditional and Non Traditional; (x) Rural Energy Futures; and (xi) Energy Planning and Policies, Centralised, Decentralised and Multilevel Planning.

The course is primarily intended for the University/College teachers of Engineering, Science and Management Studies; Scientists and Technology personnel working in R & D sectors of different Governmental and Private agencies.

Further details can be had from : Dr. B.K. Passi, Professor & Head, School of Education, Devi Ahilya Vishwavidyalaya, Indore-452001.

17th IASLIC Conference

The 17th All India Conference of the Indian Association of Special Libraries & Information Centres (IASLIC) will be hosted by the Rajasthan University, Jaipur from 27-30 December, 1989. The theme selected for the Seminar is (i) Manpower Planning for Library and Information Systems in India; and (ii) the themes for Special Interest Group (SIG) Meetings will be Social Science Information, Humanities Information, Industrial Information & Computer Applications.

The objective of the Seminar is to study the Manpower Planning for Library and Information Systems in Indian context in order to focus attention on organisation, operation, control and evaluation for a balanced and effective development of personnel for a healthy and dynamic growth of national information system.

Further details with regard to participation, etc. may be had from Dr. C.D. Sharma, Organising Secretary, XVII All India Conference of IASLIC, Rajasthan University Library, Jaipur-302004.

XIII All India Moot Court Competition

Dr. Ambedkar Govt. Law College, Pondicherry, is organising an All India Moot Court Competition from 15-17 December, 1989 to select a team to represent India in the Philip C. Jessup World International Law Moot Court Competition to be held at Washington DC in March 1990.

A Law College or a Law

Faculty can send a team of two students who are studying at the undergraduate level (B.L./LL.B.) as regular students. The sponsoring University/College has to meet the travel expenses. Dr. Ambedkar Govt. Law College, Pondicherry, would meet the expenses towards boarding and lodging of all the participants for 3 days. The problem drafted for the Jessup Competition to be held in March '90 would be argued by the participating teams. The competition would be on knock-out basis in the initial rounds and on league basis in the final rounds. Professors of International Law, senior advocates and members of Judiciary would act as judges of the competition.

viable and implementable technologies so that the country could reduce the huge import of edible oils and oilseeds by Rs. 500 crores by 1990, as envisaged by the mission.

Dr. R.S. Paroda, Deputy Director General (Crop Sciences), Indian Council of Agricultural Research in the introductory remarks disclosed that the Indian Council of Agricultural Research (ICAR) was taking steps to re-orient the oilseeds research programme by strengthening the Centre for Groundnut and Soyabean and the All India Coordinated Research Project network in the country. He said, "To give a thrust to the programme, it has been felt necessary to divide the All India Coordinated Research Projects on Oilseeds into cropwise independent All India Coordinated Projects". He further said that the ICAR was thinking to establish a national research centre on rape seed (mustard).

Dr. Sampat, Agricultural Commissioner to the Government of India, who also attended the meeting attributed the increase of 18.2 million tonnes in production of oilseeds during 1988-89 to the good support price, timely supply of inputs and the new production and protection technologies developed by the scientists of agricultural universities and ICAR institutes.

News from Agril. Varsities

Oilseeds : Mini Mission Meeting

"While there is an urgent need for speeding up and improving the research programmes on oilseeds research on the lines of the mandate given by the Government of India to agricultural universities and ICAR institutes of the country, it is also very necessary that the scientists must look into the cost-benefit ratio before making any recommendations aimed at increasing and establishing oilseed production in the country", said Dr. Har Swarup Singh, Vice-Chancellor, Haryana Agricultural University, while addressing the meeting of the Mini Mission-I of the National Mission on Oilseeds, held at HAU recently. Dr. Singh further said that the scientists should always keep in view not only the needs of the farmers and the country but also the resources available. The meeting of Mini Mission-I was held to review the progress of work of the 135 acti-

vely engaged 'milestone centres' identified by the Technology Mission in 1986 to boost the production of oilseeds in the country.

Dr. P.V. Shenoi, Special Secretary to the Government of India, Ministry of Agriculture who is the Director of the Mission on Oilseeds, gave a resume of achievements of technology mission on oilseeds since its inception and asked the scientists to work for

SPORTS NEWS

East Zone Inter Varsity Volleyball

The East Zone (A) Inter University Men's Volleyball Championship 1989-90 sponsored by the Association of Indian Universities

was recently organised by the Manipur University. Shri Chintamani Panigrahi, the Governor-Chancellor of the Manipur Uni-

versity inaugurated the Tournament in which 13 universities of the East Zone participated. The host university won the team Championship of the East Zone(A) and Calcutta University were the runners up.

The participating universities were (i) North Bengal University, (ii) Sambalpur University, (iii) B.C.

Krishi Viswavidyalaya, (iv) Rabin-dra Bharati University, (v) Berhampur University, (vi) Manipur University, (vii) Burdwan University, (viii) Utkal University, (ix) Calcutta University, (x) Orissa University of Agriculture and Technology, (xi) Jadavpur University, (xii) Kalyani University and (xiii) Dibrugarh University.

Bielefeld, FRG; (2) ESADE, Barcelona, Spain (3) INSEAD, Fontainebleau, of ESSEC, Cergy-Pontoise, France; (4) K.U. Leuven, Belgium; (5) London Business School, United Kingdom; (6) Rotterdam School of Management, Erasmus University, Netherlands; (7) S.D.A., Bocconi University, Milano, Italy.

News from Abroad

Management Faculty Exchange Programme

Selected senior faculty members of some of the leading management institutes of the country will now get the opportunity to go to Europe for nine months to work in close cooperation with a corresponding European faculty, study a section of European industry of interest to Indian exporters and come back to impart that knowledge to industry and MBAs by way of seminars and case studies.

The 1 million ECU programme financed by the European Community which encompasses strategic management, international business, international marketing, technology choice and transfer, management of technology and general management education will generate a better understanding of the management patterns and economies of the EC countries, thus directly helping India to improve its balance of trade. An agreement to this effect has been signed recently between the Government of India and the European Commission.

The seven Indian management institutes identified for the programme are : (1) Indian Institute of Management, Ahmedabad; (2) Indian Institute of Management, Bangalore; (3) Indian Institute of

Management, Calcutta; (4) Indian Institute of Management, Lucknow; (5) University of Delhi (Faculty of Management Studies); (6) Administrative Staff College of India, Hyderabad; and (7) Tata Management Training Centre, Pune.

Their European counterparts are : (1) Bielefeld University,

For the implementation, the Indian nodal agency is the Ministry of Human Resource and the European agency the EC Delegation in New Delhi. Participants will be identified by the coordinating committee in consultation with the Directors of partner institutions and the European Foundation for Management Development (EFMD).

Initially ten participants will be selected each year. The programme will be assessed at the end of two years, prior to possible further expansion and the setting up of formal institutional linkages.

News from UGC

INSAT-1B Programme of UGC

Between 16th December to 23rd December, 1989 the following schedule of telecast on higher education through INSAT 1-B under the auspices of the University Grants Commission will be observed. The programme is presented in two sets of one hour duration each every day from 12.45 p.m. to 1.45 p.m. and 4.00 p.m. to 5.00 p.m. The programme is available on the TV Network throughout the country.

1st Transmission

12.45 p.m. to 1.45 p.m.

16.12.89

"Home of Porcelain in South China"

"Alcatraz"

"Music of North India : Bhimsen Joshi"

17.12.89

No Telecast

18.12.89

"Simple Harmonic Motion"

"Understanding Unemployment - I"

"Raw Materials : Bananas"

19.12.89

"Secondary Classroom Management Techniques"

"Management of Portal Hypertension by Distal Spleno Renal Shunt"

20.12.89

- "Sieve Analysis"
- "The French Revolution"
- "Pomology—The Science of Fruits"

21.12.89

- "Emerging Trends in Computers"
- "Modern Methods of Archeological Excavation"
- "Discovery"

22.12.89

- "Space Communications—V : Space Segment"
- "Defence Mechanism—Fantasy"
- "The Pristine Hill Stream"

23.12.89

- "Time Past Time Present"
- "Microminiatures of Armenian SSR"
- "In the Service of Man"

2nd Transmission

4.00 p.m. to 5.00 p.m.

16.12.89

- "Training Body and Mind"
- "New Challenges"

17.12.89

No Telecast

18.12.89

- "Surface Tension"
- "Inflation"
- "Tuffy the Sea Teacher"

19.12.89

- "The Basics : Instructional Planning"
- "Plastics and Polymers in Daily Life—III"

20.12.89

- "C.B.R. Test"
- "Preserving a Priceless Legacy"
- "Modern Genetics and Human Welfare—IV"

21.12.89

- "Computer Memory—III"
- "Literature and Language—I"

22.12.89

- "Vedic Mathematics—IV"
- "Comparative Politics"
- "Arid Zone Ecology"

23.12.89

- "Off the Ground—A Discussion"
- "Scenic America : The Denali Wilderness"

INDIAN COUNCIL OF MEDICAL RESEARCH

INTERNATIONAL RESEARCH FELLOWSHIPS OF NATIONAL INSTITUTES OF HEALTH (U.S.A.)

Applications (on prescribed form) are invited from candidates for award of International Research Fellowships of the National Institutes of Health, U.S.A. for specialised training in that country.

Eligibility Requirements : To be eligible for an International Research Fellowship, an applicant must :

1. hold an earned doctoral degree (Ph.D., M.D., D.O., D.D.S., D.V.M., O.D., D.P.M., Sc.D., Eng. D., Dr. P.H., or D.N.S.) or the equivalent in a health science field at the time of submission of an application to the Nominating Committee;
2. have earned the doctoral degree within 10 years of the application receipt date (should have received their doctoral degree on August 1, 1980 or thereafter);
3. have demonstrated the ability to engage in independent basic or clinical research;
4. submit a research proposal in an area of one of the biomedical or behavioral sciences;
5. have a sponsor in the United States at a non-profit institution who has agreed to accept the applicant for research on the applicant's proposed project;
6. have assurance from a non-profit institution in the home country that there is a position to which the applicant can return after completion of the fellowship;
7. be proficient in spoken and written English;
8. should not have been in the United States on J-1 visa for more than two months if they apply for a two-year fellowship or for more than 14 months if they apply for a one year fellowship;
9. not be a U.S. citizen or a U.S. permanent resident.

Application forms and details of the fellowship can be obtained before 20th February, 1990 from the Director General, Indian Council of Medical Research (Room No. 406), Ansari Nagar, Post Box No. 4508, New Delhi-110 029. The last date for receipt of completed application form by ICMR is 5-3-1990. Application forms received after the closing date will not be considered.

AIU Library

Established in 1965, the AIU Library has acquired over the years a valuable collection of books and documents on Higher Education. Among the topics prominently represented are Educational Sociology, Educational Planning, Educational Administration, Teaching & Teachers' Training, Examinations, Economics of Education and Country Studies. Developing fields of Adult Education, Continuing Education and Distance Education, and Educational Technology are also well stocked. The Library is particularly strong in its collection of reports whether they are on the setting up of different universities or on the state of Higher Education. Files of Annual Reports of different universities are also maintained. Readers are kept informed of the latest acquisitions through our column 'Additions to AIU Library'.

The Library also receives about a 100 periodical titles on Higher Education. All these are indexed regularly and a select list appears every month as 'Current Documentation in Education'.

Doctoral Degrees awarded during the preceding month are reported as 'Theses of the Month', while registrations made for such degrees are flashed as 'Research in Progress'. Bibliographies are also compiled and supplied on demand.

Research Scholars and students of education are welcome to use these resources. The Library is open from 9.00 a.m. to 5.30 p.m. Monday through Friday. Access can also be had through inter library loan for which requisition must be made through your Librarian.

THESES OF THE MONTH

A List of Doctoral Theses Accepted by Indian Universities

HUMANITIES

Philosophy

1. Arora, Kamla. *A philosophical study of Shri Sathya Sai Baba in the context of contemporary religio-philosophical milieu.* Delhi.
2. Lungalang, Querang Zasiwizo. *Language and action.* NEHU. Prof. M. Miri, Department of Philosophy, North Eastern Hill University, Shillong.
3. Maudgil, Asha. *Some main problems of Wittgenstein's later philosophy.* Hyderabad. Prof. Suresh Chandra, Department of Philosophy, University of Hyderabad, Hyderabad.
4. Mohanty, Malaya Kumar. *A critical study of some important views about religion with special reference to Marx, Freud and William James.* Kurukshetra.

Fine Arts

Music

1. Dhankar, Rita. *The tradition and textual evidents of music of Haryana and Punjab.* Kurukshetra.
2. Pant, Asha. *Mughal kalin gayan-vadan shaili ke utpatti aur vikas.* Kurukshetra.
3. Sharma, Saroj. *Kanada ke privartit rooprekha.* Kurukshetra.

Drama

1. Nirola, Anil Kumar. *A critical study of the origin and development of traditional folk instruments in Northern India.* Punjabi.

Language & Literature

English

1. Dharam Singh. *Fantasy and the novel of Satire: A critical study of the fictional writings of Evelyn Waugh, George Orwell and Aldous Huxley.* Panjab.
2. Gautam, Kripa Krishna. *A study in discourse analysis and cohesion with special reference to Harold Pinter's the Birthday Party.* Kurukshetra.
3. Murugaiyan, N. *Optimally useful bilingual dictionaries: Problems and principles of preparation.* Anna.
4. Neerja, Tara. *An approach to Frost's life and poems on Freudian grounds.* Durgawati. Prof. D.K. Moitra, Head, Department of English, Mahakoshal Arts and Commerce College, Jabalpur.
5. Sengupta, Subir Bijoy. *Romantic elements in Shavian drama.* NEHU. Dr. S. Homchaudhuri, Prof., Department of English, North Eastern Hill University, Shillong.
6. Virender Chand. *Quest for self in the heroines of Anita Desai.* HP.

Sanskrit

1. Bhopal Singh. *Acharya Haribhadra Suri krit yog bindu ka sameekshatmak adhyayan.* Kurukshetra.
2. Datta, Kusum. *Mahabharata ke shantiparva mein dharma swarupa evam vivechna.* Kurukshetra.
3. Ghosh, Bacharam. *Nats Karmasiddhan Jnana Karmasamuccayanirasena jaanamatrasya muktynapayat vapapadanam.* Calcutta.

4. Kamla. *Rigveda mein nari : Ek vivechnatmak adhyayan.* Panjab.

5. Mishra, Nirmal Sundar. *Ishvaraprasyabhiijnavimarsini : Jhanadhik : A study.* Kurukshetra.

6. Mishra, Pramoda Chandra. *Sarvanga Sundari teeka sameeksha Shree Jayadev virachita Geeta Govinda sameekshya.* Utkal.

7. Praveen Kumar. *Sarasvata Sutrapatha aur Paniniya Sutrapatha ka tulnatmak adhyayan : Sanjna, paribhasa, anubandha ke pariprekshya mein.* Kurukshetra.

8. Rajendra. *A critical study of Saundaryalahari with the commentary of Lakshmidhara.* Kurukshetra.

9. Sain, Saroj Bala. *Nyayadarsana aur arthavijnana.* Delhi.

10. Sheela Kumari. *Bharata natyasastra mein Nirupita Abhinaya Chatustya ka adhyayan.* Delhi.

Punjabi

1. Harmeet Kaur. *Bhai Vir Singh dian galp vidhian.* Delhi.

2. Saroj Kanta. *Haryanavi aur [Haryana mein prachalit Punjabi lokgeeton ka loktatvik adhyayan.* Kurukshetra.

Hindi

1. Anita. *Samkaleen Hindi kavita mein rajnitik chetna. 1960 se 1980 tak.* Kurukshetra.

2. Anjna Kumari. *Hindi kee bhavatmak sangyaon ka vishleshanaatmak adhyayan.* Panjab.

3. Bhagat, Manju. *Bhishma Sahni ke sahitya mein samajik chetna.* Panjab.

4. Chacko, P.J. *Kavyadharam ke samband mein T.S. Elliot aur S.H. Vatsyayan ke sidhanton ka tulnatmak adhyayan.* CUST. Dr. A. Ramachandra Dev, Prof., Department of Hindi, Cochin University of Science and Technology, Cochin.

5. Chidambara Sastry, Rayaprolu. *Seth Govinda Das ke vichar dhara.* Andhra.

6. Jogad, Lalita. *Nirala ke gadya sahitya mein abhivyakta samaj jeevan.* SNTD. Dr. Uma Shukla, Reader, Department of Hindi, Shrimati Nathibai Damodar Thackersey Women's University, Bombay.

7. Kapoor, Dharam Paul. *Prasad sahitya mein ateechhinton : Vartman ke pariprekshya mein.* HP.

8. Malhotra, Sapna. *Samkaleen natakkaron ke nari patron ka samaj manovigyanik adhyayan.* Panjab.

9. Paramjit Kaur. *Sukha Singh krit Guru Villas ka sameekshatmak adhyayan.* Kurukshetra.

10. Pathak, Pratibha. *Swatantrayottar Hindi upanyas mein adhunikta kee mansikta.* Delhi.

11. Prasad, Prasoon Lata. *Samkaleen natakkaron ke gurush patron ka samaj manovigyanik adhyayan.* Panjab.

12. Shukla, Rameshchandra. *Hindi shoudh evam sameeksha ke sandarbh mein ritikaleen prabandh kavyon ka mulyankan.* Nagpur. Dr. Ramgopal Soni, Vidyapeeth Educational College, Nagpur.

13. Walia, Virender Krishan. *Hindi kangal kavya pramitara ke pariprekshya mein Gurumukhi lipi mein uplabdh mangal kavyon ka vishleshan aur mulyankan.* Punjabi.

Urdu

1. Syed Shakiluddin Qazi. *Maulana Zafar Ali Khan as a poet.* HS Gour. Dr. Mohd. Shafie, Head, Department of Urdu and Persian, Seva Sadan College, Burhanpur.

Bengali

1. Bandyopadhyay, Ajit Kumar. *Bangla sahitye swapnattwa adrishtabad.* Calcutta.

2. Chakraborty, Arun Kumar. *Buddhadeva Bose as literary critic.* Gauhati. Dr. Dipak Sen, Reader, Department of Bengali, Gauhati University, Guwahati.

3. Chakraborty, Biplab. *Calcutta in Bengali Novel, 1858 to 1960.* Nagpur.

4. Chattopadhyay, Kakali. *New Direction in Bengali prose from 1941 to 1960 : A linguistic study.* Calcutta.

5. Kar, Shyamali. *Bish shatakar challisher deshaker Bangla katha sahitya rajnitik, arthanaitik O manastatwik prabanata.* Visva Bharati.

6. Sabakuthial, Nita. *Prachin-o-Madhya juger Bangla sahityer sangitik patabhumi.* Calcutta.

Khasi

1. Shangpliang, John Santar. *Love as a theme in Khasi novels.* NEHU. Dr. H.W. Sten, Reader, Department of Khasi, North Eastern Hill University, Shillong.

Oriya

1. Parida, Bijaylaxmi. *The women in the Oriya short stories : From Fakirmohan to the date of independence.* Utkal. Dr. N. Satapathy, Prof., Department of Oriya, Utkal University, Bhubaneswar.

Marathi

1. Deshpanda, Govind Narayan. *Shri Vaman Narayan Deshpande yanchaya smagra vangmaycha abhyas.* Nagpur. Dr. V.B. Prabhu Desai, Department of Marathi, Nagpur University, Nagpur.

Kashmiri

1. Koul, Ashok Kumar. *A linguistic study of loan words in Kashmiri.* Kurukshetra.

Kannada

1. Venkareddy, Madhu. *Honnammanna Hadibadeya dharmaondu adhyayana.* Karnatak. Dr. Veeranna Rajur, Reader, Institute of Kannada Studies, Karnatak University, Dharwad.

Geography

1. Jhunjhunwala, Kamal Kumar. *Rural urban interaction, and the pattern of linkages in the Khasi Jaintia Hills area.* Gauhati. Dr. N. N. Bhattacharyya, Reader, Department of Geography, Gauhati University, Guwahati.

History

1. Anantharamaiah, D. *Socio economic change of depressed classes in Mysore State, 1902-1952.* Bangalore. Dr. K. Veerathappa, Prof. and Head, Department of History, Jnana Bharathi Campus, Bangalore University, Bangalore.

2. Deshpande, Vijaya Jayant. *Alchemy in India and China.* Panjab.

3. Dey, Ratna. *Land revenue administration in Cachar during British rule, 1832 to 1900.* Gauhati. Dr. S.K. Barpujari, Reader (Retd.), Chenikuthi, Hill Side, Guwahati.

4. Dubey, Sharda. *National Conference Emergence and Activities till 1953.* Jammu. Dr. Hari Om

5. Rode, Somnath Shankar. *Life and works of Dr. Baba Amte.* Marathwada. Dr. T.V. Pathy, Prof. and Head, Department of History, Marathwada University, Aurangabad.

EDUCATION NEWS INDEX

A List of Select Articles and Editorials on Education from Newspapers received in the AIU Library during November, 1989.

EDUCATIONAL PHILOSOPHY

Saxena, Sanjay. Education and the changing trends. *Patriot* 4.11.89.

EDUCATIONAL PSYCHOLOGY

Srigiri Nath, N.S. Qualities to be developed in the individual. *The Hindu* 7.11.89.

EDUCATIONAL SOCIOLOGY

Amrik Singh. Social justice via Navodaya schools. *The Times of India* 4.11.89.

Chidambaram, R. Women scientists : A case for pink collars. *The Economic Times* 22.11.89.

Shamsuddin. Whither education ? *National Herald* 28.11.89.

STATUS OF WOMEN (Editorial) *Deccan Herald* 9.11.89.

EDUCATIONAL POLICY AND PLANNING

Amrik Singh. Education under Rajiv Gandhi. *The Times of India* 18.11.89.

Comelius, J.K. To make education a life-long endeavour. *The Hindu* 21.11.89.

Jalaluddin, A.K. Education and human resource development. *Patriot* 9.11.89, 10.11.89.

Rahman, Salim. Managing new technical potential. *National Herald* 26.11.89.

Shah, Viren J. Technology and human commitment. *National Herald* 26.11.89.

Shome, Anand. Resource deployment for new technologies. *National Herald* 26.11.89.

Sood, Yogesh. India and Information technology. *National Herald* 26.11.89.

EDUCATIONAL ADMINISTRATION

ACADEMIC INTEGRITY (Editorial) *The Times of India* 2.11.89.

Chakraborty, Tapas. Severe crisis grips management institution. *The Telegraph* 27.11.89.

Jalaluddin. Education and human resource development. *Patriot* 8.11.89.

Kak, M.L. Bandhs upset study schedule. *The Tribune* 19.11.89.

Khan, Asif. Promoting scholarship. *Amrit Bazar Patrika* 29.11.89.

CURRICULUM

BIGOTS IN ACADEME. (Editorial) *The Statesman* 4.11.89.

Edelson, Edward. Forging a new science of the earth. *The Indian Nation* 6.11.89.

Naik, B.M. Science Park : Valuable tool to tap knowledge. *The Economic Times* 14.11.89.

LANGUAGE & LANGUAGE POLICY

Narayanaswamy, K.S. Mother tongue, irreplaceable in language formula. *The Hindu* 7.11.89.

VOCATIONAL EDUCATION

DOCTOR-TEACHERS (Editorial) *Deccan Herald* 4.11.89.

DISTANCE EDUCATION

Open Universities. (Editorial) *Deccan Herald* 17.11.89.

EDUCATIONAL RESEARCH

THE ANAEMIC STATE OF ACADEMIC RESEARCH. *The Hindu* 6.11.89.

EDUCATIONAL TECHNOLOGY

TECHNOLOGY DATA BANK. (Editorial) *Patriot* 2.11.89.

LIBRARIES & BOOKS

Das, Banamali. Assam needs sound library policy. *The Assam Tribune* 19.11.89.

Prafulla Chandra, T.V. Improving library and information services. *The Hindu* 21.11.89.

PHYSICAL EDUCATION & SPORTS

IS THIS CRICKET ? *The Tribune* 8.11.89.

ADULT EDUCATION

Joshi, Navin Chandra. Meaningful education for masses. *The Economic Times* 1.11.89.

Joshi, Uma. Adult education gets a boost. *Amrit Bazar Patrika* 7.11.89.

Sethi, J.D. Fraud on the illiterate. *Free Press Journal* 1.11.89.

Sethi, J.D. Writing off literacy. *The Tribune* 1.11.89.

COMPARATIVE EDUCATION & COUNTRY STUDIES

Kurup, M.R. and Thatte, L.R. Higher education in Maharashtra. I. An inter-regional analysis. *The Economic Times* 30.11.89. II. Demand and supply forecasts. *The Economic Times* 1.12.89.

Shamsuddin. Universities in Ancient India. *The Indian Nation* 2.11.89.

Sil, Sailen. Brabourne College beset with problems. *Amrit Bazar Patrika* 5.11.89.

INSTITUTIONAL PROFILE

Barua, HP. Assam Medical College : Its past, present and future. *The Assam Tribune* 3.11.89.

Chatterjee, Nilanjan. Spreading the Gandhian ideology. *Amrit Bazar Patrika* 28.11.89.

BIOGRAPHICAL PROFILE

Aruna Asaf Ali. Jawaharlal Nehru : A great teacher. *Patriot* 14.11.89.

Verma, D.P. C.V. Raman : India's rare jewel. *The Tribune* 5.11.89.

BANARAS HINDU UNIVERSITY

(Advertisement No. 5/1989-90)

Applications are invited for the undermentioned posts. The benefit of Provident Fund/Pension, Dearness Allowance, House Rent Allowance and City Compensatory Allowance are admissible according to University rules. The retirement age of the University Employees for teaching posts is 60 years and 58 years for non-teaching posts. The appointment will be made on one year probation on all permanent posts. Higher starting salary within the grade is admissible to specially qualified and experienced candidates.

Applications will be entertained on the prescribed form duly supported with a Bank Draft/Indian Postal Order/Overseas Postal Order of Rs. 10/- (of Rs. 2.50 for the candidates belonging to Scheduled Caste/Scheduled Tribes category) in favour of the Registrar, BHU towards application fee. Permanent employees of the B.H.U. (including those on probation) are exempted from payment of application fee. Application form alongwith detailed qualifications will be supplied on receipt of crossed I.P.O./Bank Draft of Rs. 2/- in favour of the Registrar, BHU and self-addressed envelope of 23 cm x 10 cm size carrying stamps of Rs. 2.60. The University will not defray the travelling or other expenses of candidates called for interview but shall contribute actual Railway fare by shortest route for second class plus reservation charges for sleeper and/or the actual Bus fare from the candidates' normal place of residence in the case of candidates called for interview. Candidates from outside India shall be entitled to actual Railway fare by shortest route for second class plus reservation charges for sleeper and/or actual Bus fare from the port of entry to the place of interview.

Application for each post be sent separately alongwith attested copies of certificates and mark-sheets in support of the qualifications and experience mentioned in the application and be addressed to the Registrar (Selection Committee Section), Banaras Hindu University, Varanasi-221005, India.

Incomplete application in any respect will not be entertained for consideration. Those who are in service should apply through proper channel. Money Order or Cheque will not be accepted towards application fee.

Reservation : (1) A reservation of 15% in the case

of Scheduled Caste and 7½% in the case of Scheduled Tribes will be made in the category of teaching posts upto the level of Lecturers only. (2) A reservation of 22½% (15% S.C. and 7½% S.T.) will be made in the category of non-teaching posts at entry level.

The last date for receipt of application in the Office of the Registrar (Selection Committee Section), Banaras Hindu University either by post or by hand will be **January, 12, 1990**. Applications will be received by hand at the Counter from 10.30 hrs. to 14.30 hrs. on each working day till the last date. No application shall be entertained after the last date from external, in-service employees and the candidates residing abroad.

- Note :**
1. For Lecturer's post where no specialisation is stipulated, the number of vacancies may increase by the time the Selection Committee meets to interview candidates.
 2. Those who have already applied timely for the posts shown at serial numbers 1, 3 to 8, 10, 12 to 14, 16, 19 to 27, 30, 31, 33, 34, 39 to 41, 48 to 87, 90 to 92, 96, 97, 99 to 103, 105 to 111, 113, 114, 116 to 118, 120, 121, 123 to 126, 128, 129, 131 to 137, 142, 144, 147, 148, 150 to 152, 154 to 156, 158, 161 to 163 and 168 to 170 need not apply again but they will be considered according to the qualifications wherever revised. However, they may send ten copies of their latest bio-data for consideration.

Grade : Professor—	Rs. 4500-150-5700	N.P.A. as per rules to Medical Graduates appointed in the Institute of Medical Sciences only.
	200-7300	
Reader—	Rs. 3700-125-4950-	
	150-5700.	
Lecturer—	Rs. 2200-75-2800-	
	100-4000.	

Other Posts—As indicated against each post.

INSTITUTE OF MEDICAL SCIENCES

1. Professor of Medicine (Endocrinology) (One)
2. Professor of Medicine (One)
3. Professor of Physiology (One)
4. Professor of Anatomy (Teratology) (One)
5. Professor of Biochemistry (One)

6. Reader in Biophysics (One)
7. Reader in Tuberculosis & Chest Diseases (One)
8. Reader in General Medicine (One)
9. Reader in Medicine (General Medicine) (One)
10. Reader in Medicine (Nephrology) (One)
11. Reader in Medicine (Neurology) (One)
12. Reader in Pathology (Immunopathology) (One)
13. Reader in Radiotherapy & Radiation Medicine (One)
14. Reader in Physiology (Reproductive Physiology) (One)
15. Reader in Anatomy (Neuro-anatomy) (One)
16. Reader in Radiology (One)
17. Reader in Surgery (Plastic) (One)
18. Reader in Anaesthesiology (Three)
19. Reader in Rasashastra (One) (Faculty of Ayurveda)
20. Reader in Sangyahan—Anaesthesiology (One) (Faculty of Ayurveda)
21. Lecturer in E.N.T. (Otology) (One)
22. Lecturer in Dental Surgery (Operative Dentistry) (One)
23. Lecturer in Physiology (Two)
24. Lecturer in Biological Psychiatry (One)
25. Lecturer in Social Psychiatry (One)
26. Lecturer in Paediatrics (Two—including one under Post Partum Programme—Dept. of Paediatrics)
27. Lecturer in Forensic Medicine (One)
28. Lecturer in Skin & V.D. (One)
29. Lecturer in Surgery (General) (One)
30. Lecturer in Statistics (One) (Dept. of Paediatrics)
31. Radiological Physicist (One) (Dept. of Radiotherapy & Radiation Medicine)
Grade : Rs. 2200-4000.
32. Medical Officer (Community Medicine) (One) (Dept. of P.S.M.)
Grade : Rs. 2200-4000.
33. Immuno-Chemist (Immunodiagnostic Training & Research Centre) (One)
Grade : Rs. 2200-4000.
34. Immuno-Biologist (Immunodiagnostic Training & Research Centre) (One)
Grade : Rs. 2200-4000.
35. Instructor in Physical Education (One) (I.M.S.)
Grade : Rs. 2200-4000.

S.S. HOSPITAL

36. Deputy Medical Superintendent (Modern Medicine) (One)

Grade : Rs. 3700-5700+N.P.A., if any, as per rules.

37. Store Officer (One)
Grade : Rs. 2200-4000

UNIVERSITY STUDENTS HEALTH CARE COMPLEX

(Outdoor Service & Indoor Ward)

38. Chief Medical Officer (One)
Grade : Rs. 3700-5700+N.P.A., if any, as per rules.

COMPUTER CENTRE

39. System Manager/System Engineer (Head of Computer Centre) (One)
Grade : Rs. 1500-2000 (pre-revised).

INSTITUTE OF TECHNOLOGY

40. Professor of Electronics Engg. (One)
41. Professor of Pharmaceutics (One)
42. Professor of Mechanical Engg. (Industrial Management) (One)
43. Professor of Mechanical Engg. (Production Engg.) (One)
44. Professor of Mining Engg. (Mine Environment) (One)
45. Professor of Chemical Engg. (Process Dynamics & Control) (One)
46. Professor in Metallurgical Engg. (One)
47. Professor of System Engg. (One) (Dept. of Electrical Engg.)
48. Reader in Pharmacy (One)
49. Reader in Ceramic Engg. (One)
50. Reader in Ceramic Engg. (Refractories) (One)
51. Reader in Ceramic Engg. (Refractories/Ceramic Coating) (One)
52. Reader in Applied Geology (One) (Dept. of Civil Engg.)
53. Reader in Civil Engg. (Any branch of Civil Engg.) (One)
54. Reader in Civil Engg. (Structural Engg.) (One)
55. Reader in Civil Engg. (Environmental Engg.) (One)
56. Reader in Chemical Engg. (Instrumentation & Process Control) (One)
57. Reader in Chemical Engg. (Three)
58. Reader in Mechanical Engg. (Machine Design & Drawing) (One)
59. Reader in Mechanical Engg. (Industrial Engg.) (One)
60. Reader in Mechanical Engg. (Machine Design) (One)

61. Reader in Physical Metallurgy (Heat Treatment) (One) (Under Special Assistance Programme)—Dept. of Metallurgical Engg.
62. Reader in Mining Engg. (One)
63. Reader in Electronics Engg. (Microwave Tubes) (One) (Centre for Research in Microwave Tubes), Dept. of Electronics Engg.
64. Reader in Electronics Engg. (Devices) (One)
65. Lecturer in Civil Engg. (Environmental Engg.) (One)
66. Lecturer in Civil Engg. (Surveying) (One)
67. Lecturer in Civil Engg. (Soil Mechanics & Foundation Engg.) (One)
68. Lecturer in Civil Engg. (Water Resources & Hydraulic Engg.) (One)
69. Lecturer in Civil Engg. (Structural Engg.) (One)
70. Lecturer in Electrical Engg. (Control/Power Electronics/Net Work) (One)
71. Lecturer in Electrical Engg. (Electrical Machines & Drives/Power Systems/Computer applications in the above areas) (One)
72. Lecturer in Electrical Engg. (Computer/Micro-processor Applications/Measurements/Instrumentation) (One)
73. Lecturer in Mechanical Engg. (Seven)
74. Lecturer in Metallurgy (Three)
75. Lecturer in Physical Metallurgy (Two)
76. Lecturer in Mining Engg. (Ore Dressing) (One)
77. Lecturer in Mining Geology (One)
78. Lecturer (School of Material Science & Technology) (One)
79. Lecturer in Electronics Engg. (Solid State Devices) (One)
80. Lecturer in Electronics Engg. (Electronic Instrumentation) (One)
81. Lecturer in Electronics Engg. (One)
82. Lecturer in Bio-Medical Engg. (Instrumentation Assay) (One) (School of Bio-medical Engg.)
83. Assistant Workshop Superintendent (Main Workshop—I.T.) (One)

Grade : Rs. 2200-4000.

INSTITUTE OF AGRICULTURAL SCIENCES

84. Professor-cum-Senior Scientist (Genetics & Plant Breeding) (One) (under All India Coordinated Pulse Improvement Project)
85. Professor of Animal Husbandry & Dairying (One)
86. Reader in Genetics & Plant Breeding (Spl. in Plant Breeding) (One)
87. Reader-cum-Plant Pathologist (One) (under All India Co-ordinated Pulse Improvement Project—Dept. of Mycology & Plant Pathology).

88. Lecturer in Entomology & Agricultural Zoology (One)
89. Lecturer-cum-Junior Scientist (Entomology) (One) (under All India Co-ordinated Pulse Improvement Project—Dept. of Entomology & Agric. Zoology).

UNDER BIOTECHNOLOGY PROGRAMME

90. Professor/Reader in Bio-Technology (Three) (in the areas of Industrial Microbiology, Membrane Biology, Biochemical Engg., Immunology, Biophysics, Tissue Culture, Bacterial Genetics, Enzymology and Enzyme Engineering)
91. Reader/Lecturer in Bio-Technology (Four) (in the areas of Industrial Microbiology, Membrane Biology, Biochemical Engg., Immunology, Biophysics, Tissue Culture, Bacterial Genetics, Enzymology and Enzyme Engineering).

FACULTY OF SCIENCE

92. Professor of Zoology (Animal Biochemistry) (One)
93. Professor of Zoology (One)
94. Professor of Statistics (One)
95. Professor of Geology (One)
96. Reader (Remote Sensing) (One) (under Special Assistance Programme—Dept. of Geography)
97. Reader in Geology (Spl. in Mathematical Geology/Photo-geology) (One)
98. Reader in Geology (One) (Spl. in Mathematics Geology/Geo-tectonics/Palaeontology/ Geothermics and Photo-geology).
99. Reader in Botany (Molecular Biology) (One)
100. Reader in Botany (Two)
101. Reader in Botany (Ecology with experience in Angiosperm Systematics) (One) (under Centre of Advanced Study in Botany—Dept. of Botany).
102. Reader in Mathematics (Number of posts may be more than THREE)
103. Reader in Chemistry (Physical) (One)
104. Reader in Inorganic Chemistry (Spl. in Structural Inorganic Chemistry/Solid State Inorganic Chemistry) (One)
105. Lecturer in Geology (Micropalaeontology and Oceanography) (One)
106. Lecturer in Geology (One)
107. Lecturer in Botany (Molecular Biology) (One)
108. Lecturer in Zoology (Two)
109. Lecturer in Zoology (Biochemistry—Protein Chemistry) (One) (under Centre of Advanced Study in Zoology—Dept. of Zoology)

110. Lecturer in Zoology (Reproductive Biology/Endocrinology-Invertebrate Endocrinology) (under Centre of Advanced Study in Zoology—Dept. of Zoology) (One)
111. Lecturer in Zoology (Cytogenetics—Developmental Genetics) (One) under Centre of Advanced Study in Zoology—Dept. of Zoology)
112. Lecturer in Physics (Two) (One post reserved for S.T. Candidates)
113. Lecturer in Statistics (One) (Reserved for S.T. Candidates—(Mahila Mahavidyalaya)
114. Lecturer in Chemistry (Physical) (One) (Mahila Mahavidyalaya)
115. Lecturer in Chemistry (One) (Reserved for S.C. Candidates)

FACULTY OF ARTS

116. Professor of English (Contemporary Literature) (One)
117. Professor of Philosophy (One)
118. Gaikwad Professor of Indian Civilization & Culture (One) (Department of Philosophy)
119. Professor of Sanskrit (One) (Mahila Mahavidyalaya)
120. Professor of History of Arts (One)
121. Professor of Arabic (One)
122. Reader in Archaeology (One)
123. Reader in English (American Literature/or Commonwealth Literature) (One)
124. Reader in English (Four)
125. Reader in English (One) (Mahila Mahavidyalaya)
126. Reader in Hindi (Contemporary Hindi Poetry) (One)
127. Reader in Hindi (One)
128. Reader in Sanskrit (Philosophy/or Veda) (One)
129. Reader in Sanskrit (One)
130. Reader in Philosophy (Two)
131. Reader in Malayalam Comparative Literature (One)
132. Lecturer in Journalism & Mass Communication (Spl. in Radio & Oral Communication—T.V. and Film Journalism) (One)
133. Lecturer in Journalism (One)
134. Lecturer in Russian (One)
135. Lecturer in French (One)
136. Lecturer in Urdu (One) (Department of Urdu)
137. Lecturer in Urdu (One) (Department of Urdu)

Note : This is the same post which was advertised earlier for Evening College.

138. Lecturer in Physical Education (Athletics) (One)
139. Lecturer in Physical Education (Yoga) (One)

140. Lecturer in Physical Education (Gymnastics) (One)
141. Lecturer in Physical Education Games (i) Basketball/(ii) Cricket/(iii) Football/(iv) Handball/(v) Swimming (One)

FACULTY OF SOCIAL SCIENCES

142. Professor of Economics (Economic Planning International Trade) (One)
143. Professor of Sociology (One)
144. Professor of Political Science (One)
145. Professor of Psychology (One)
146. Reader in Guidance & Counselling (One)
147. Reader in Psychology (Two)
148. Reader in Political Science (Two)
149. Reader in History (One)
150. Reader in [History (Medieval Indian History) (One)
151. Reader in History (Ancient Indian History) (One)
152. Reader in Economics (One)
153. Reader in History (One) (Reserved for S.C. Candidates)

CENTRE OF ADULT & CONTINUING EDUCATION

154. Director (One)
Grade : Rs. 4500-150-5700-100-7300
155. Assistant Director (One)
Grade : Rs. 3700-125-4950-150-5700.
156. Project Officer (Two)
Grade : Rs. 2200-75-2800-100-4000.

FACULTY OF VISUAL ARTS

157. Professor of History of Arts & Aesthetics (One)
158. Lecturer in Drawing (Interior Decoration) (One) (Dept. of Applied Arts)
159. Lecturer in Mural (One) (Dept. of Painting)

FACULTY OF PERFORMING ARTS

160. Lecturer in Instrumental Music (Violin) (One)

SANSKRIT VIDYA DHARMA VIGYAN SANKAY

161. Professor of Sahitya/Darshan (One)
162. Professor (One)
163. Lecturer in Sahitya (One)

FACULTY OF LAW

164. Professor of Law (One)
165. Lecturer in Law (One)

169. Lecturer in Museology (One)
170. Lecturer in Fine Arts & Art History (One)

FACULTY OF COMMERCE

166. Lecturer in Commerce (One) (Reserved for S.C. Candidates)

FACULTY OF EDUCATION

171. Reader in Special Education (One)
172. Lecturer in Special Education (One)

CENTRAL LIBRARY

167. Professional Junior (One)
Grade : Rs. 2200-4000.

FACULTY OF MANAGEMENT STUDIES

173. Assistant Librarian (Professional Junior) (One)
Grade : Rs. 2200-4000.

BHARAT KALA BHAWAN

168. Deputy Keeper (Paintings) (One) (Reserved for SC/ST Candidates)
Grade : Rs. 2200-4000.

PUBLIC RELATIONS OFFICE

174. Public Relations Officer (One)
Grade : Rs. 3700-5700.

MADURAI KAMARAJ UNIVERSITY

Academic Staff College

REFRESHER COURSE IN MICROBIOLOGY

Schedule of Programme

Sl. No.	Schedule of Programme	Course Coordinator	Last Date for Receipt of Applications
1.	Microbial Biotechnology (1-2-90 to 21-2-90)	Prof. K. Dharmalingam	12-1-90
2.	Microbial Genetics (1-3-90 to 21-3-90)	Prof. R. Jayaraman	12-2-90
3.	Molecular Microbiology (23-3-90 to 14-4-90)	Prof. S. Shanmugasundaram	1-3-90
4.	Industrial Microbiology (20-4-90 to 11-5-90)	Dr. P. Gunasekaran	1-4-90
5.	General Microbiology (15-5-90 to 5-6-90)	Dr. K. Rajakumar	25-4-90

Only lecturers who possess more than 5 years of experience in teaching Microbiology and employed in Colleges/Departments of Universities included under Sec. 2 (f) of the UGC Act are eligible to apply for the above course.

The prescribed application form and other details may be had from the Director-I/c., Academic Staff College, Madurai Kamaraj University, Madurai 625 021 on requisition accompanied by a self-addressed envelope affixed with postal stamp for Re. 1/- only.

Prof. S. Ramachandran
DIRECTOR

CLASSIFIED ADVERTISEMENTS

RAVISHANKAR UNIVERSITY, RAIPUR

Employment Notification No. 6/89

Dated : 21 November, 1989

Applications are invited for appointment to the following posts in the University Teaching Departments.

Last date of receipt of completed application form in the University Office is 22 December, 1989 within working hours of the University.

Sl. No.	Name of the Department	Name of the Post	No. of Post	Requirements besides Qualification for different categories of Post as per Ordinance No. 4
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IV PLAN POSTS

1.	Geography	Professor	1	Open
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VI PLAN POSTS

2.	Sociology	Reader	1	Sociology of Leadership
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		Lecturer	1	Sociology of Family
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3.	Bio-Science	Reader	1	Physiology (Plant/Animal)
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		Lecturer	2	-do-
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4.	Electronics	Professor	1	Should possess a Master's/ Doctoral Degree in Electronics.
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		Reader	1	-do-
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		Lecturer	2	-do-
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5.	Comparative Religion & Philosophy	Reader	1	Classical Western Philosophy/ Philosophy of Science/Symbolic Logic.
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		Lecturer	1	Jainism & Buddhism/Islamic Religion/Christian Religion/Comparative Religion.
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6.	Anthropology	Reader	1	Open
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7.	Physical Education	Director	1	(A) A Master Degree in Physical Education (High 2nd Class with Diploma in Sports Coaching from a Recognised Institutions.
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OR

A Master Degree in Physical Edu. (High II Class) with a record of having represented this University at the Inter University level/State in the National Championship.

- (B) Experience in Organising games & Sports (as exemplified in handling of about half a dozen teams in a year in his Inst. & their Participation in Uni./Inter Collegiate tournament & ability to encourage mass participation in games & Sports.

Qualification & Pay Scale : As per U.G.C. norms.

1. Details of qualifications and the prescribed application form can be obtained from the Registrar by sending Rs. 5/- by crossed Bank Draft together with a self-addressed envelope of 23 x 11 cm. size bearing postal stamp worth Rs. 7.20. Fee for application form will not be accepted by money order or postal order.

2. The requirements regarding minimum percentage of marks shall be relaxed upto 5% in the case of SC/ST candidate 15%, 7.5% of Lecturers post shall be reserved to SC/ST candidates respectively.

3. Application (7 copies) with complete details (Bio-data) will be acceptable, on plain paper also, but the application in prescribed form will have to be submitted at the time of interview.

4. Qualifications etc. as on the date of interview will be taken into consideration while making the selection.

5. Advance increment in the pay scale may also be sanctioned to outstanding candidates.

6. Application on prescribed form with completed details showing the Employment Notification No. & Specialization required must reach the Registrar's Office on or before 22-12-1989.

7. The number of posts in individual subjects may vary.

8. The Candidates who have applied for the above posts in response to our previous employment notification will have to apply fresh.

Dr. M.P. Agnihotri
REGISTRAR

RABINDRA BHARATI UNIVERSITY CALCUTTA

Addendum

Ref. to the Advt. Notice
Dated 15-11-89.

Application for the post of Reader in Vedic Studies. 6 copies of application in prescribed form to be obtained from University Office at 56A, B.T. Road, Calcutta-50 accompanied by a crossed postal order for Rs. 20/- payable to Rabindra Bharati, may be sent to the Registrar at the address above.

R.C. Mitra
REGISTRAR

NATIONAL METALLURGICAL LABORATORY

(Council of Scientific & Industrial Research)

JAMSHEDPUR 831007

RECRUITMENT OF SCIENTIST
E-II, E-I, C & B

NML ADVERTISEMENT NO. 6/89

[Last date for receipt of completed applications : 16.01.1990]

National Metallurgical Laboratory (NML) wants to appoint several Scientists at the E-II, E-I, C & B levels in three different CATEGORIES.

NML is a leading laboratory of the country, engaged in research and its application—in the area of preparation and properties of engineered materials. Its objective is pursuit of excellence in all areas of its research activities and their application for the benefit of the society. NML is looking for scientists with high academic background, commitment and career goals commensurate with its objectives. The applicant should have excellent achievement record of producing creative work in activities related to job requirement.

Scientist 'E-II'	Rs. 4,500-150-5,700
Scientist 'E-I'	Rs. 3,700-125-4,700-150-5,000
Scientist 'C'	Rs. 3,000-100-3,500-125-4,500
Scientist 'B'	Rs. 2,200-75-2,800-EB-100-4,000

Plus allowances as admissible under Central Govt. Rules

Age: Preferably below 40 years, relaxable in deserving cases.

Category I : SCIENTISTS IN RESEARCH AND DEVELOPMENT ACTIVITIES

Position of Scientist 'E-II/E-I' and 'C' are available in the following areas and sub-areas

Computer Application : Heat and Mass Transfer, Stress Analysis, Numerical Methods, and Simulation & Modelling of Metallurgical Processes; Corrosion

Protection : Protection and Coatings, Corrosion Behaviour, Inhibitors; Ferrous Process : Iron Ore Reduction, Steel-making, Refractories; Material Evalua-

tion : Creep, Non-Destructive Evaluation, Fatigue and Fracture of Materials; Materials Processing : Powder Metallurgy, Casting and Solidification, Phase

INDIAN COUNCIL OF MEDICAL RESEARCH

Applications are invited upto 30th December, 1989 for the post of Programme Officer for National Cancer Registry Project.

Job Requirements : The incumbent will

- be the technical incharge for the National Cancer Registry Project of the ICMR.
- guide the registries in conducting research related to working of cancer registries as well as epidemiological and intervention studies.
- review the progress of each registry periodically and prepare the necessary report.

Qualifications and Experience : (i) MD/MS/Ph.D./D.Sc., in Medicine/Pathology/Microbiology/Preventive and Social Medicine/Community Medicine/Radiotherapy/Radiodiagnosis Surgery/Epidemiology/Oncology/Biostatistics and related disciplines or equivalent post-graduate qualifications, (ii) Research experience of 15 years with original work to the Credit of candidate in epidemiology related to oncology.

Desirable : (i) Administrative experience in a responsible capacity (ii) Knowledge and experience in the operation of cancer registry.

Salary/Conditions of Service : Rs. 5900-200-6700 (revised) plus allowances as per Central Govt. rules. Private practice is not allowed. Non-practising allowance is admissible to medical graduates only as per rules of the Council.

Age : Below 50 years. Relaxable for SC/ST candidates as per Government orders.

Applications forms can be obtained from the office of the Director-General, Indian Council of Medical Research, Ansari Nagar, Post Box No. 4508, New Delhi-110 029. Forms duly completed should be sent to the Director-General, ICMR, New Delhi with a crossed IPO for Rs. 8/- payable to the DG, ICMR, New Delhi. SC/ST candidates are exempted from this payment.

Place of Work : At Technical Wing which may be located at one of the Cancer Registries at Delhi, Bombay, Trivandrum, Bhopal, Bangalore, or Madras.

Note : Qualifications, experience, etc. shall be relaxable in deserving cases by the appointing authority.

Transformation, Electron Microscopy and X-ray Diffractometry; Mineral Processing: Beneficiation of Ores and Minerals; Non-Ferrous Process: Extraction and Electrowinning, Roasting and Leaching, Smelting and Refining.

Job Requirements

Plan, organize, execute, and in the case of E-I/E-II level, preferably lead-research in the areas indicated above and/or

Formulate, execute and in the case of E-I/E-II levels, also supervise-research projects in the areas indicated above.

Essential Qualifications

Post-Graduate Degree in Engineering or Ph.D. in Science with R & D experience of four years and about ten years for Scientist 'C' and Scientist 'E-II/E-I', respectively.

Desirable Qualifications

Ph.D. degree in Engineering in the relevant fields, following a first class Bachelor's Degree in Engineering.

Experience in interaction with user/market to transfer new technology.

Category II : SCIENTISTS IN INFRASTRUCTURE AND SUPPORT ACTIVITIES

Position of Scientist 'E-II/E-I', 'C' and 'B' are available in the following areas and sub-areas

Construction Services & Maintenance: Electrical, Mechanical and Civil; **Instrumentation & Electronics:** Maintenance of Sophisticated R & D Equipments, Microprocessor Applications; **Project & Process Engineering:** (Pertaining to Metallurgical and Chemical Processes) Scale-up, Design & Fabrications; **Technology Utilization & Planning:** Transfer of Technology & Monitoring of Research Activities.

Job Requirements

Plan, organize, execute and, in the case of E-I/E-II level, preferably lead-development / operational activities in the areas indicated above, and/or

Formulate, execute and, in the case of E-I/E-II levels, also supervise—

developmental/operational projects in the given areas.

Essential Qualifications

First Class Bachelor's Degree in Engineering in the relevant branch of engineering with experience in activities related to job requirement of two years, six years and twelve years for scientist 'B', 'C' and 'E-II/E-I' respectively.

OR

Post-Graduate Degree in Management (Only for the areas of Technology Transfer/Planning) or Post Graduate Degree in Engineering (for all the areas)—for appointments at the Scientist 'B' level. In addition, the minimum experience related to job requirement for Scientist 'C' and 'E-I/E-II' are four years and ten years respectively.

Desirable Qualifications

Post-Graduate Degree in Engineering following a first class bachelor's degree in Engineering.

and/or

Experience in interaction with user/market to transfer new technology.

Category III : SCIENTISTS IN INFORMATION MANAGEMENT & PUBLICATION

Positions of Scientist 'E-II/E-I', 'C' & 'B' are available.

Job Requirements

Writing, editing, preparation and production of NML's annual reports, technical journals, newsletters, technical brochures/leaflets

and/or

Preparation and production of video films describing NML's R & D activities for the users/clients/public

and/or

Projection of NML's R & D work and publicity through Press/Radio/TV/Models/Exhibits/Posters

Essential Qualifications

First Class Bachelor's Degree in Engineering / Architecture or Master's Degree in Science or Post-Graduate Diploma/Degree in Journalism / Mass Communication followed by experience

of 2 years, 6 years and 12 years for the levels 'B', 'C' and 'E-I/E-II' respectively, and/or

Post Graduate Degree in Industrial Design or a Master's Degree in Business Administration/Management following a degree in Engineering or a Ph.D. in a related area for 'B' level. In addition, relevant years of experience for level 'C' and level 'E-I/E-II' are 4 years and about 10 years respectively.

Desirable Qualifications

A post-graduate degree/diploma in journalism / mass communication / film making following the basic qualification in engineering, architecture, science or industrial design.

General Information

1. Upto 5 advance increments could be recommended by the Selection Committee for candidates with truly exceptional credentials and performance. Relaxation of experience in exceptionally bright cases is allowed.
2. Application Form for all posts are obtainable by post (Free of cost) from the Administrative Officer, National Metallurgical Laboratory, Jamshedpur 831007, by sending self-addressed and stamped envelope (Re. 180 paise) of 28 x 13 cms. Completed application form together with non-refundable application fee of Rs. 8.00 in the form of a Demand Draft on State Bank of India, NML Branch, Jamshedpur 831007, drawn in favour of Director, National Metallurgical Laboratory, Jamshedpur 831007 along with attested copies of certificates / testimonials etc., should reach the Director, National Metallurgical Laboratory, Jamshedpur 831 007, on or before 16.01.1990.
3. Candidates already employed in Government / Semi-Government / Autonomous organisations must apply through proper channel.
4. Candidates applying for more than one post should submit separate applications along with the prescribed application fee specifying number of advertisement and post applied for.
5. Incomplete applications and those received after the last date will not be considered.